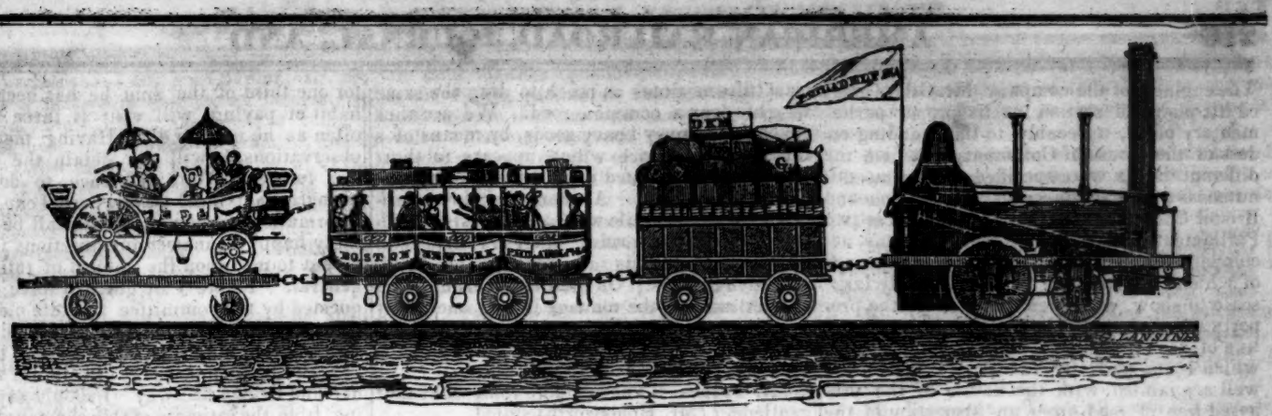

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL, & c.

NEW-YORK, APRIL 12, 1834.

We publish the following letter from our esteemed correspondent and friend, E. L. Miller, Esq., of Charleston, S. C.

D. K. Minor, Esq.:

Dear Sir,—I send you enclosed, the amount of my subscription for the Railroad Journal for the current year, and as it may not be altogether uninteresting to you, annex a brief statement of the performance of a locomotive steam engine, recently built under my direction by Mr. Baldwin, of Philadelphia, and now running on the Charleston and Hamburg Railroad. She started from Aiken, 120 miles from Charleston, on Thursday morning last, at 15 minutes past 7 o'clock, with 11 cars loaded with cotton; at Blackville, 90 miles from Charleston, another load was added; at Midway, 72 miles from Charleston, 2 others were added; and at Branchville, 62 miles from Charleston, a fourth load was added—making in all a train of 15 loaded cars. This immense weight, not less than 80 tons, including engine and tender, was delivered in Charleston, at 7 o'clock 15 minutes, in the evening of the same day, notwithstanding delays on the road, at the different stations, of 4½ hours—making the running time 7½ hours only, for the distance of 120 miles. Numerous ascents of 20 to 35 feet per mile, were overcome with this load, and what is of most importance to those interested in railroads, is, that the greatest weight on either wheel of the engine does not exceed 1½ tons. Respectfully, yours,

E. L. Miller.

The Railroad.—A single track of the railroad between this city and Columbia was finished last week, and on Sunday the first horse car arrived from the latter place. On Monday, three horse cars with passengers, left this city, and arrived at Columbia [distance about 11 miles by the railroad] in an hour and a quarter. Yesterday the locomotive, with its tender, and four passenger cars in train, started from the depot in Chesnut street, to make the first trip with steam power.—[Lancaster (Pa.) Examiner, April 3.]

[*From the Baltimore American.*]

The Legislature of Louisiana, which has just adjourned, adopted a very severe, and, we trust, efficient law for the regulation of steamboats, so as to secure them from explosion. The number of fatal accidents on the Mississippi—particularly the disastrous one by which Senator Johnston lost his life—imperiously called for some legislative interference to secure care and fidelity in the management of engines, and every practicable assurance of their soundness. The new law manifests great anxiety to establish minute precautions against accident, as well as misconduct, and imposes heavy penalties on the agents and owners in every case of damage, which any possible care might have prevented. To make the law more effective, it has been sent to the Executive of all the States bordering on the Mississippi, and its tributaries, for similar action.

The law establishes the office of State Engineer for the port of New Orleans. The duty of the engineer is to examine, once in three months, the strength of the boilers of steamboats plying within the waters of the State; to test them by hydraulic pressure to *three* times the weight of steam they may be supposed capable of carrying; and to furnish each boat with a certificate specifying the weight of steam which may be safely used.

In case any accident happens on board any boat, not possessing the proper certificates, neither captain, owner, nor agent, can recover any claim for freight or insurance; the owner or agent is made responsible to the shipper, to the full amount of all damage, and the captain is further subjected to a fine, not less than $500, nor more than $2000, and to imprisonment for not less than three months, nor more than three years. If lives are lost, the captain is to be adjudged guilty of manslaughter.

The same penalties to the several parties, are provided in case of any accident in navigation, from over loading, racing, carrying higher steam than the certificate allows, or any accident "that may occur while the captain, pilot, or engineer is engaged in gamlbing or attending to any game of chance or hazard.

The same penalties are provided in case of any accident, from gunpowder, shipped without a written notice of the fact being posted in three conspicuous parts of the boat.

Shippers are made liable to a fine of $200 for shipping gunpowder, without notice to the master or clerk, and also made liable for danger that may happen by any accident therefrom; and in case of loss of life are adjudged guilty of manslaughter.

In passing on the river, the descending boat is commanded to shut off steam and float down when within a mile of an ascending boat—the latter to assume the responsibility of steering clear of the other, and being liable for all damages.

Other minute directions are given, but the above form the principal enactments of the law, which appear to be drawn up with a determination to enforce rigorous penalties against any carelessness in the management of steam engines on the Mississippi, within the limits of the State of Louisiana.

The Farmers' & Mechanics' Bank with other Banks in Albany, have, as we hear, taken the *Chenango loan* of $900,000 at 6 1-2 per cent. premium for a 5 per cent. stock—irredeemable till 1845.

The following extract, from an English paper, shows some of the *important* reasoning urged *against* Railroads. It contains others, also showing their great importance from a source entitled to great credit.

Mr. Vignoles addressed the meeting as follows: I present myself before the meeting at the request of the directors of the London and Windsor Railway Company; but I beg that the gentlemen present will do me the favor of expressly understanding that I do not come here in any way connected with them personally. They have called upon me in my professional capacity to lay before them a certain report; with that request I have complied; it is in their hands, and ready for distribution, if they think proper. They consider, however, that it would be more satisfactory, both to this meeting and to themselves, if I would attend here, for the purpose of giving a *viva voce* explanation to many gentlemen who perhaps have not had an opportunity of perusing that report, which I beg the meeting will distinctly understand is simply a professional report, on the comparative merits of two lines of section, I not having seen the contrary, nor having had an opportunity of knowing any of the parties connected with this undertaking, until within the last few weeks. The line of country between London and Bristol consists chiefly of two vallies, the principal one of which is that of the Thames. A bare inspection of the map will at once satisfy any gentleman that Windsor lies in the direct road towards the first principal town where it will become necessary to quit the valley of the Thames; that town is Reading. In fact, it is perfectly well known that any line of road proceeding in this direction, and much more a railroad from London to the western part of England, must pass through Reading. The question, then, was what part of the intermediate country should be included in the line, that through Windsor being in a perfectly straight direction? I am well aware that this was only one of many points of consideration. In arranging a matter of this nature, direction and straightness are no doubt very leading characteristics; but the levels and the expense are other objects requiring no less consideration.

The engineer of the company, Mr. Gibbs, lodged his plan and section in the proper parliamentary office, agreeably to the standing orders of the House of Commons, in which the different levels were specified with great minuteness; the engineer of the London and Bristol Company did the same, and these two Parliamentary sections were sent to me, accompanied by the necessary maps. The maps of which I speak were on a sufficiently large scale to show, with great minuteness, the property of every individual along the projected line of road; and this being a subject with which I am perfectly familiar, I became as well acquainted with the nature of the proposed line of road, from an inspection of the maps, as if I had lived on the ground. I went through the usual necessary calculations, and I can now state, that I have ascertained that in point of levels, in point of expense, and in point of general direction, any railroad from London o Reading ought to pass through Windsor. (Cheers.) There connot be a doubt of it in a professional point of view. (Hear, hear, hear.) It would only be taking up the time of this meeting unnecessarily if I were to enter into any minute detail. My report has been made, and if the directors, after my looking over it, should deem it advisable to print it for distribution, I am quite willing that my professional reputation should stand or fall by that report. (Renewed cheering.) I have had the honor either of being employed upon or consulted in the progress of almost every railroad of importance which has been sanctioned by the House of Commons during the last eight or ten years; and I am now engaged in the construction of some of the most important that have yet been projected. It is almos unnecessary for me to say, that with the pecuniary question, or the discussion of local interests, I have nothing to do on the present occasion. I have been requested by the directors, however, to add a few popular remarks on the nature of railways in general, which, if the meeting will not consider it obtrusive, I will now subjoin, for the information of those gentlemen who have not had an opportunity of seeing these new modes of communication. (Hear, hear.) A railway, to speak familiarly, is a perfect road. We all know that a level road is the best, and we also know that roads are best in summer, or when they are constantly dry and hard, being then of course easier for travelling. A railway is a road carried to perfection: it consists of bars of iron, supported at intervals on stone blocks, and otherwise so as to form a hard and uniform surface, on which the wheels of the carriage roll, the wheels of the carriages being prevented from running off the rail by means of an angular piece of iron, which was called the flanche. The surface of the country over which the railroad passes is reduced by cuttings and embankments, to a line as nearly horizontal as possible. In the railway from London to Reading through Windsor, this reduction will be such that no elevation will exceed from five to six feet in the course of a mile—that is to say, if the road be constructed upon the plan submitted to me by the London and Windsor Railway Company. (Hear, hear.) The line from London to Reading, through Windsor, is infinitely preferable to that which is projected through Maidenhead, because in some cases the elevations on the latter line of road are as much as 18 feet in a mile. (Cheers.) The road having been levelled is then formed, and the rails, supported, as I mentioned just now, by blocks at intervals of a yard, are placed upon it, and firmly secured, the roadway being well drained. By these contrivances the resistance which a wheel generally meets with upon a road, particularly in bad wintry weather, is reduced in fact to nothing, and by means of peculiarly constructed wheels and axles, the friction there is reduced also, so much so, that a weight or force of eight pounds will, on a good railroad, draw a ton; whereas it requires a force of at least fifteen times as much to drag the same weight over a common road. We are thus enabled to convey heavy goods, by means of a railroad, at a price which appears to those who are unacquainted with the subject, almost ridiculously small. A charge of three halfpence per ton per mile will pay interest on capital invested in railroads. They are enabled to convey goods at this rate by means of the locomotive engines. On the Liverpool and Manchester railroad the tonnage is only one penny per ton per mile. This, perhaps, will be an answer to those gentlemen who doubt the cheapness of railways in this respect.

Mr. Pococx.—That is more than what that gentleman (Mr. Holdsworth) stated.

Mr. Vignoles.—These are the maximum rates on coal. It must be borne in mind too, that upon the Liverpool and Manchester railway there are some severe inclinations—there are two, each of fifty-five feet in a mile. These inclines of course increase the expense of carriage; as the whole quantity of goods have to be lifted as it were up the railroad, in order to attain the upper level. According to the plan of the committee, this part of the expense will be so small in the present instance, that I may venture to say the cost of the company for the conveyance of goods could not exceed, for the moving power, three-eighths of a penny per ton per mile.

Mr. Pococx.—Three-eighths of a penny?

Mr. Holdsworth.—Just a farthing and a half.

Mr. Pococx.—That is considerably more than what Mr. Holdsworth stated. A waggon load of dung will weigh four ton. Now he said that we could have that moved for sixteen or eighteen miles along the railroad for the same expense as we now bear for carrying it three miles. Now, on a common road, I can get that carried three miles for 2s. 6d. (Hear.)

Mr. Vignoles.—Yes, and along the railway you could get it conveyed 16 miles for 16d. ("Hear, hear," and laughter.)

Mr. Pococx.—The laugh is against me now, but you will remember that it is not one ton but four; and four times 16d. is 5s. 4d. (Hear, hear.)

Mr. Vignoles.—Excuse me, but I don't think you are very likely to find any waggons in this neighborhood which will weigh four tons.*

Mr. Pococx.—Yes, I can. I have seen them many a time at Mr. Ramsbottom's there. ("Hear," and laughter.)

Mr. Vignoles.—To return to my statement. I have little doubt either in saying that it is almost as easy and as cheap for a railroad company to carry one thousand passengers as six hundred. Successful as the locomotive engines have been, I fully believe that power to be yet in its infancy, although even now it has been carried to an extent almost incredible to gentlemen who have not had an opportunity of witnessing its effects. Its operation is so familiar to me that it has ceased to be a wonder. Conceive, however, what I myself have seen at Manchester—conceive an engine conveying 200 people at the rate of 20 miles an hour with perfect ease, and ask yourselves if it can be doubted for a single moment that this same tremendous power must speedily be brought into extensive operation in other parts of the country? On the Stockton and Darlington road, before the formation of the railway, there was no traffic at all; by means of the railroad 200 or 300 persons traverse that road every day, who, by a saving of one half the time, and one half the money, enjoy four times the facilities of travelling which they formerly possessed. The establishment of a railway, in fact, must increase the traffic. It is but reasonable to suppose that the man who can travel down to Windsor in an hour, transact all his business, and returnhome again for one third of the sum he has been in the habit of paying, will visit it three times as often as he used to do. Having made these observations, I will not detain the meeting any further. With reference to details relating to individual landowners, I can give no information whatever, but I shall be exceedingly happy to answer any questions that may be put to me upon the subject of railroads in general. Before I sit down, I have been requested by the committee to state clearly the difference between the line projected by the London and Windsor Committee and that proposed to be adopted by the directors of the London and Bristol Railway. I should say, speaking from the estimate of this company's engineer, which I believe to be perfectly correct, although I have thought it my duty to increase the estimated expense in making my report, that the cost of the railroad between London and Reading, passing through Windsor, would not average more than 13,000*l.* per mile, while the average expense of a railroad between London and Reading, passing by Maidenhead, would be 25,000*l.* per mile. (Loud cries of "hear.") I need hardly say that if a railroad can be made at a reduced expense of one-half, the conductors of that railroad can afford to carry goods and passengers for much less than they otherwise could. I, however, as I have already hinted, have increased the estimate of the company's engineer to 16,000*l.* per mile; which, I believe, will finish it effectually and completely. I have had some experience, and I feel justified in saying that at all events this railroad will cost, taking all its expenses, at the very utmost, 16,000*l.* per mile, and not 25,000*l.* per mile. (Hear, hear.) I should also mention that the Bristol Company propose to have a considerable length of tunnel on their line of road, which is always objectionable, but more especially on railways, in consequence of the noxious atmosphere which is necessarily engendered by the locomotive engines in so confined a place, where it cannot be dispelled by an adequate supply of fresh air. The amount of cuttings and embankments, too, according to the plan proposed by the committee, will be very small. I will illustrate this position in rather a striking manner. Between Windsor and Reading the quantity of *materiel* necessary to be removed is 400,000 cubic yards; between Ashmill and Reading, via Maidenhead, it is upwards of 2,000,000 cubic yards. (Cheers.) These, gentlemen, are the facts on which I have formed my inferences, these are the grounds on which I have drawn up my report. I have retained the meeting by this statement, with the view of drawing the attention of gentlemen to the subject, and if any of those who are now present would be interested by reading the report in detail, I again say that I can have no objection to its distribution. (Mr. Vignoles resumed his seat amidst considerable applause.)

Mr. Vignoles.—Perhaps you will favor us with a list of the failures, sir, and I will answer you. (Much cheering and laughter.)

Mr. Payn.—It can easily be proved—easily. Certainly, gentlemen, Mr. Vignoles has very eloquently expatiated on the great benefits arising from railroads, but you will have the goodness to recollect he is a superintendent of railways. (A laugh.) The currier says there is nothing like leather; the bug-destroyer prides himself upon his specific for destroying that obnoxious insect, and the superintendent of railways tells you that railroads are very excellent things. It is all very well, but I do not think it any reason why we should have our lands cut through.

Mr. Vignoles.—I was not aware when I was expressing what I considered to be an impartial opinion as to the comparative merits of two lines of road, that I should draw down upon myself such an animadversion as the gentleman sitting on the green cloth (Mr. Payn) has cast upon me.

Mr. Payan.—No, no.

* Since the meeting took place, we have been informed by Mr. Vignoles, that the average price of farmers' carting all over England is not less than 6d. per ton per mile.

Mr. Vignoles.—I beg your pardon, sir, you have been pleased to call me an inspector of railways. Now, I have the honor of being a civil engineer, in considerable practice, and if all the railroads in the kingdom went to the bottom of the sea to-morrow, I should have quite enough to do; I have been told, too, that if this projected railroad is proceeded with there are some gentlemen who would lose some very good situation or other. (Much laughter and cheering.)

Mr. Pocock.—I don't know anything about situations. If you take my land away, I can't farm it.

Mr. Vignoles.—Now, with respect to the 44 acts of Parliament which the same gentleman (Mr. Payn) has alluded to, I beg most decidedly to dissent from his statement. There may have been some 44 acts for the establishment of tramroads, which were in vogue some 30, 40, or 50 years ago, which have gone to decay, and have been ruinous speculations, simply because they proceed on erroneous principles; but it is quite clear that all those modern constructions which we call railroads, which are adapted to the use of the locomotive engines (and those I more particularly advocate), have been quite successful, so far as the experiment has yet been tried, particularly the Liverpool and Manchester Railway, which was opposed, as I believe the hon. gentleman very well knows, tooth and nail by every land owner, on the ground that the railway would injure their interests. That railway, however, having been obtained—ay, in spite of their teeth, is so far successful that another railway establishment between Liverpool and Manchester is now about to be projected, and it is generally understood under the patronage of the very same landed proprietors who combined and conspired, I would say, against the former one. With respect to the number of railroad acts that have been passed I can undertake to say that there are not above six or seven which relate to these modern railways. The Stockton and Darlington was the first public act: that was successful, and 100*l* shares in that company are now selling in the market for 300*l*.; and shares in the Liverpool and Manchester railway, originally of the value of 100*l*., are now worth 200*l*. With reference to others, all I can say is, that they are selling at respectable premiums. Upon the subject of the patronage of his Majesty's government, all I can say is, that I had the honor of speaking to a member of the ministry on Monday last on the subject, and that so far from the government feeling any opposition to railways, its members individually are decidedly in their favor. (Hear, hear.) I speak of them in their individual capacity, because it would be contrary to parliamentary practice if they afforded any one an opportunity of explaining their sentiments as a body on such a subject, for it is a part of the admirable spirit of the English government to let capital fight its own way, it being well understood that English enterprise and speculation, when left to itself, exerts itself in a manner which is most beneficial for the country at large. Before I sit down, perhaps I may trouble the meeting with one more observation, to which I more particularly beg the attention of landholders—viz. the effect of railways in reducing the poor-rates. (Hear, hear.) Along the whole line of road between Liverpool and Manchester, a very large sum is contributed by the company towards the poor-rates, so much so that a reduction of them to the extent of 25 per cent. has taken place in one parish alone. (Cheers.) At all events, the proprietors of this railway, which is 30 miles in length, pay nearly 4,000*l*. a year for poor-rates in the various parishes through which that line of road passes. (Renewed cheers.)

Mr. Pocock.—Will you have the goodness to tell us, sir, how they are assessed?

Mr. Vignoles.—In proportion to their profits, according to the beneficial enjoyment—in the same manner as canal companies. I have again to beg pardon of the meeting for intruding upon their attention a second time, but really when a professional gentleman attends for the purpose merely of giving an explanation, he being personally indifferent to the success of either scheme, it is rather hard that his conduct should be animadverted upon as mine has been. I am as much interested in the success of canals as I am in the well-being of this species of undertaking. I have the honor of being consulted upon the navigation of one of the most important rivers in Ireland, and with the management of various public works—such as bridges, docks, and canals, and therefore I say again, I am not dependent on railways. (Cheers.)

Mr. Pocock.—You have said that the landed proprietors are all in favor of a second railway between Liverpool and Manchester. Is it for the improvement of their land, or the investment of capital, in the hope of getting a profit?

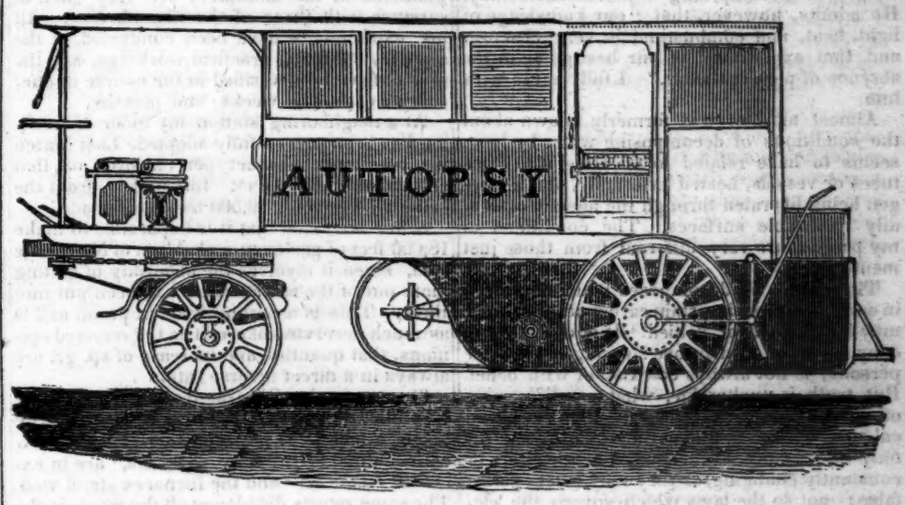
Mr. Vignoles.—In either case it showed their conviction that they could not pursue a better course, and that a railway could not do them any harm. (Hear.)

Mr. Pocock.—As you are so scientific, I should like to know how a railway improves the land?

Mr. Vignoles.—By affording facilities for the conveyance of goods to and from market.

Mr. Pocock.—We have got them already—I have for one.

Mr. Vignoles.—Then, all I can say, sir, is, that you are more fortunate than your neighbors.



Hancock's Steam-Carriage "Autopsy."—We give an engraving of Mr. Hancock's last new steam-carriage, the "Autopsy,"—the same which performed the journey to Brighton and back, with so much success, about three weeks ago, and which has been running daily, during all the present week, between Finsbury square and Pentonville. We have witnessed its performances repeatedly, both as passengers and as lookers-on—and only re-echo the general opinion, when we say that it works admirably. The machinery, which is constructed on the improved plan, for which Mr. Hancock's last patent was taken out, will be found fully described in a subsequent communication from Mr. Hancock himself.

The quantity of coke expended in each journey of (about) two miles, scarcely exceeds a bushel; so that even supposing the tear and wear were to be as great as in the case of Mr. G. Stephenson's engines on the Liverpool and Manchester Railway, or even twice or thrice as great, the returns from such a carriage, running between the City and Pentonville or Islington, must be sufficiently ample to afford a very handsome profit. According to the following calculation, with which we were favored by a fellow-passenger, there would be a clear gain, during a period of 365 days, of nearly cent. per cent.

CAPITAL REQUIRED TO BE INVESTED.

Cost of steam-carriage	£700
Spare ditto, to use when the other is under repair,	700
	£1,400

Dr.

Wages—engineer 40s. per week, steersman 30s. assistant 20s.	£234
Repairs	150
Tolls 4d. each journey × 12 × 365	73
Coke 6d. per journey × 12 × 365	109
Water	50
Rent of coach office and coach house	100
Clerk	50
Premium to the patentee, at the rate (say of 1d. per passenger) 12 × 24 × 365	438
Reserve Fund to replace carriage when worn out—probably in 3 or 4 years	175
	1,452
Dividend of £84 on £1,400	1,176
	£2,628

Cr.

By twelve journeys per day, and twelve passengers each way, at 6d. each, 12 × 24 × 365,	£2,628

[London Mechanics' Magazine.]

Mr. Rutter's New Mode of Generating Heat—Successful Application to Gas Works. [From the London Mechanics' Magazine.]

Sir,—I beg you will not impute my long-continued silence to any other cause than incessant occupation during the last three months. I am not indifferent to the opinions of some of your correspondents, nor am I insensible to the kind wishes which have of late been expressed towards me, in reference to my process for generating heat.

To dislodge prejudice is no easy task, especially when it has become venerable by age, or respected through the influence of great names. Truth will eventually prevail; but its progress bears no analogy to that of the glowing meteor. May it not rather be compared to the twilight of the morning, that melts imperceptibly into the dawn of perfect day?

It was once the fashion, I believe, to devise ingenious theories, and then endeavor to make practice conform to those theories. This seems to have been beginning at the wrong end. A more natural process is now adopted,—a process in which experiment supplies the materials for constructing theories and illustrating first principles.

Arrears have accumulated so heavily upon me that I scarcely know where to commence. If I pass over any of the observations of your

correspondents which appear justly entitled to notice, I hope you will believe the omissions are unintentional. Until Colonel Macerone (No. 529, page 453,) republished his letter of November 25, 1826, I was wholly unacquainted with his views respecting the use of liquid fuel. I do not remember that I had ever seen, or heard, or read, any thing relating to the subject until the summer of 1832, and then my information extended no further than that coal tar was employed in heating gas retorts.

Mr. Cheverton (No. 531, page 28,) first made me acquainted with the name of Morey, whose 'American water burner' was very kindly and opportunely described (No. 533, page 52,) by Mr. W. H. Weekes. That experiment was new to me. I have since tried it, but, I must confess, without any perception of its being rendered "applicable, in many cases, in place of a furnace."

Mr. Cheverton implies a doubt as to the possibility of decomposing water economically. He admits, however, that "our knowledge of light, heat, and combustion, is very obscure, and that experiment is our best guide in the absence of perfect theory." I fully agree with him.

Almost all that was formerly known about the conditions of decomposing water by heat, seems to have related to effecting it in close tubes or vessels, heated externally, the hydrogen being liberated through the agency of readily oxidizable surfaces. The conditions of my process are very different from those just mentioned.

That water is decomposed when employed in conjunction with certain carbonaceous fluids, may be doubted or denied. It is one thing to deny, another to disprove: seeing, with some persons, is not always co-existent with belief. But truth is unalterable, whatever differences of opinion may prevail respecting it. In physical science, fact and experiment constitute the only safe guides to theory. Theories may be constantly changing, or they may be altogether false: not so the laws which govern the elements of the material universe. We may be ignorant of those laws, but are they on that account the less uniform and invariable in their results?

Mr. George Bayley (No. 533, page 52,) has my thanks: were he to see my memoranda of last May and June, he would be amused at the coincidence of our views respecting the use of tanks for stowing tar and preserving the trim of vessels. Will Mr. Bayley permit me to set him right in a trifling matter? The specific gravity of coal tar is *greater* than that of water.

The communication of your Salisbury "correspondent" was almost a verbatim copy of my own printed statement. I have no intention of interposing between "Correspondent" and "An Old Gas-maker," neither of whom are known to me, excepting in your pages; yet I may perhaps be permitted to say a few words to the latter, in reply to his remarks, No. 537, p. 125.

It never was intended to set forth that 17,100 cubic feet of gas could be obtained from a chaldron of Newcastle coal *only* through the agency of my heating process. It would be mere trifling to say that heat, externally applied to retorts, whatever may be the kind of fuel employed, could materially affect the internal process of distillation. All other conditions being the same, I produce an equal quantity of gas from a given quantity of coal, whether the fuel employed be coal, or coke, coal and coke combined, or coal in conjunction with fluid materials. I will not say that an equal amount of work may be done in the same time, and at the same cost with solid fuel, as with solid and liquid together. In the former case it is more difficult to preserve the same uniformity of temperature than in the latter; and it is impossible, by any ordinary means, to obtain an equal quantity (or intensity) of heat from equal weights of solid and of liquid fuel.

The most startling part of 'Correspondent's' (or rather my statement), in the view of 'An Old Gas-maker,' seems to be that which relates to the density of the gas. An increased quantity of gas, and at the same time "an increased specific gravity," is "so much at variance with the generally received opinions of the present day," that "An Old Gas-maker cannot but conclude that there must be some error in that part of the statement." I have great pleasure in assuring him that there is not the slighest error. During the week last past, I have made from 81 bushels of Newcastle coal (80 lbs. per bushel,) 40,590 cubic feet of purified gas = 18,036 feet per chaldron = 14,028 per ton. Average sp. gr. 0.535.

These workings may not be in accordance with "the received opinions of the old school." I cannot be answerable for that. Experiment, not opinion, has been my guide. I only exhibit facts as I find them. By experiment I would have it understood that I mean not a *mere* experiment, which may rather be viewed as an exception than adopted as a rule. The manipulations of the laboratory are very often at variance with those of the manufactory. All my experiments have been conducted in the ordinary course of practical workings, and the results have been verified in the course of successive days, and weeks, and months.

At a neighboring station my mode of working has been successfully adopted. Last March the maximum product per chaldron on that station was 13,000 feet. In October, from the same kind of coal, 16,500 feet were made.

It has been said that it is impossible to make 18,000 feet of gas from a chaldron of Newcastle coal, since it involves the absurdity of getting more out of the retorts than had been put into them. This is assertion without proof, and is as much deserving of credit as the received opinions, that quantity and increase of sp. gr. are always in a direct inverse ratio.

To comfort an Old Gas-maker, I can assure him that the retorts I am now heating, by means which he is pleased to designate 'a new combination of the fiery elements,' are in excellent condition—and the furnaces stand well. The same retorts did almost all the work of the station here, during the last winter.

I am not sure that I have yet attained to the maximum product of gas from a given quantity of coal. After making 18,000 feet per chaldron, I find there are sufficient materials to make probably 4 or 5,000 feet more gas. At present I have no means of appropriating these materials for gas-making economically. With the same retorts, and the same apparatus that I am now working, I required, in Nov. 1832, to produce 46,580 feet of gas, 136 bushels of coal. In Nov. 1833, I have made an equal quantity of gas from 92½ bushels of the same kind of coal.

A question in which every practical gas-maker should feel interested, is, whether it be best to keep up a large fire principally for the purpose of making tar and coke, and ammoniacal liquor, or whether that fire may not be more profitably employed in generating gas?

It would extend this paper beyond all reasonable limits, were I now to enter more fully upon details. It would, moreover, be anticipating the proposed publication, in a different form, of my views and experiments connected with this subject. 'An Old Gas-maker' will, I hope, exercise a little patience; and if I appear to him somewhat slow in my movements, let him remember that I am neither an *old* gas-maker, nor a gas-maker by *profession*. All I do in that, or any other department of science, is during the few interstices of leisure that occur amongst more important engagements.

Will Mr. E. Walker, No. 536, p. 107, be so good as to inform the readers of the Mechanics' Magazine, by what means he has ascertained that coal gas, when used in close apartments, is a *deadly poison*? Is it absolutely necessary, when this gas is so used, that it should be permitted to escape into the room? What are the properties of the respective products of combustion resulting from purified coal gas and *long ten* tallow candles?

That I am deeply interested in these questions, Mr. Walker will perceive, when I tell him that I use gas in my bedroom instead of rush candles. I have done it because gas is cheaper than candles, and much more convenient.

J. O. N. RUTTER.

Lymington, Nov. 27, 1833.

Mr. Rutter's New Mode of Generating Heat. [From the London Mechanics' Magazine.]

SIR,—Mr. Rutter says, with truth, that his invention is never likely to be used where fuel is cheap, for according to his statement, although tar is but three-pence per gallon, it is still dearer than coal, the account standing thus:

4 cwt. 0 qr. 20 lbs. of coke at 25s. per ton,	5s. 2½d.
27½ gallons of tar at 3d.....	6s. 10 d.
	12s. 0 ½d.

And coal may be had at from 7s. to 12s. per ton.

Besides, as the demand for tar increases, so must it increase in value, and thereby operate still further against its general adoption. Then, as regards originality, without wishing to detract one iota from the merit of Mr. Rutter, I think it but right to say that, at the gas-works here, tar has been consumed for some years past, not for the sake of economy, but merely to get rid of it, and, as I take it, in a manner somewhat analogous to that proposed by Mr. Rutter, viz.: over a certain measure of coke are thrown two cans of water, and one of tar; but from the effluvia arising from its combustion, this admixture cannot be used.

In commenting on the new mode of generating heat, Mr. G. Bayley, page 51, has been hurried, by an inconsiderate admiration, to wander far from the truth, and that, principally, through confounding weight for bulk. Want of "stowage" can only be understood to imply want of room, and a chaldron of coal and a chaldron of coke must occupy equal spaces; but as the former weighs 28, and the latter only 18 cwt., "stowage" cannot possibly be found in the same vessel for an equal weight of each. The comparison of volume and weight will therefore stand thus—

	cwt.	qr.	lbs.
A chaldron of coke.....	18	0	0
110 gallons of tar.....	10	3	6
	28	3	6

Which, multiplied by 3, will be equal to 86 cwt. 1 qr. 18 lbs. of coal.

Taking the specific gravity of coke and tar as equal, it gives 1·599 chaldron of the compound, and 3·084 chaldron of coals, or the effective quantities rather less than two to one, instead of three to one, as stated by Mr. Bayley.

As regards stowage, water of course need not be taken into account; but in estimating the comparative cost, 15 or 16 cwt. of water being required for every ton of coke, some allowance ought to be made on account of the labor, &c. necessary to remove it from alongside into the reservoir for supplying the fire. I will take leave of the subject at present, with noticing two minor errors: first, Mr. Bayley states the fluid required is withal of less specific gravity than water; while Mr. Rutter states the tar to be 11 lbs., and water is but 10 lbs. per gallon. Again, in stating the comparative economy, he says, 1½ gallons of tar at 1½d. per gallon, is a 1½d but this is no doubt a press error. Yours, respectfully,

TREBOR VALENTINE.

Application of Mr. Rutter's New Mode of Generating Heat to Steam Vessels. [From the London Mechanics' Magazine.]

SIR,—My remarks, in No. 533, page 32, appear to have excited the displeasure of your talented correspondent, Trebor Valentine, on account of my "inconsiderate admiration" of Mr. Rutter's new method of generating heat, which, he says, had led me to wander far from the truth. This is a grave charge, and were it not made by a person in a mask, I might be induced to take it in high dudgeon.

How far I am justly liable to the charge of "inconsiderate admiration" of the process, is known only to myself. Not having a copy of my former letter at hand, I am unable to refer

to the precise terms I then employed; but I have a distinct recollection that my "inconsiderate admiration" was chiefly referable to three points, viz., the saving of stowage, weight, and expense. It so happens that I have had some experience in building and navigating steam-vessels, and may, therefore, without presumption, lay claim to so much practical knowledge as to be qualified to express an opinion upon the desirableness of Mr. Rutter's method of generating heat.

I have often felt the want of convenient stowage for coals, notwithstanding there were many vacant spaces low down in the vessel, each containing a few cubic feet, in which small tanks for coal-tar might have been advantageously placed, but which were either unsuitable or inconvenient for the stowage of coal. The trifling weight of coke, compared with an equal bulk of coal, renders it much more convenient for stowage on board a steamer than coal, as it can be safely and advantageously stowed where it would be highly imprudent to stow coal, on account of its greater weight. Mr. Rutter's plan allows of the division of the fuel into small masses, so that, by due arrangement, it may be stowed in such a way as to lower the centre of gravity, and thus increase the stability of the vessel. Whether I have bestowed "inconsiderate admiration" on Mr. Rutter's plan, in this respect, I leave to you and your readers to decide.

With regard to the diminution of weight, I took Mr. Rutter's data, and, on reference to my former communication, think that it will be found that the difference is 3 to 1 in favor of Mr. Rutter's plan. Even on Trebor Valentine's own shewing, it is 2 to 1, which is sufficient advantage in point of weight to secure the "inconsiderate admiration" of persons like myself, who have found ourselves greatly impeded in our progress by the great weight of the coals we were compelled to take on board to supply the engines. But our "inconsiderate admiration" goes yet farther on this head, because the fluid admits of being stowed away in tanks, fitted to the vacant spaces near the bottom of the vessel, so as to bring the centre of gravity lower down than it usually is in steam-vessels worked with coals in the ordinary manner. This alteration in the centre of gravity would greatly increase the stability of a steamer, and lessen the labor of the captain and crew in trimming her upright when heeled either way, by the shifting of the passengers, or by the pressure of the sails. It is also very desirable to keep the vessel in as nearly the same trim as possible, that the paddle-wheels may act with their maximum effect. Mr. Rutter's plan offers the advantage of being able to dispense with half the weight we are now obliged to carry, and thus offers another attraction to call forth the "inconsiderate admiration" of the captains and engineers of steamboats.

It appears that I have made a blunder as to the specific gravity of the tar, and I stand corrected. I had no intention to misrepresent the fact, but having, as I thought, observed that coal tar floated on salt water, I considered its specific gravity to be rather less.

I took the cost of the tar at 1½d. per gallon. I formerly purchased it at one penny per gallon, and not knowing its present price in large quantities, I thought that I had made sufficient allowance by stating it at three halfpence; and your correspondent, in No. 543, page 211, fully bears me out in my estimate being rather above than below the mark. Why Trebor Valentine should charge me with having wandered far from the truth, I cannot conceive, seeing that, for the purpose of convicting me of an error, he has at least doubled the cost of the ingredients in Mr. Rutter's plan for generating heat. Surely his "inconsiderate" prejudice, or something else, has led him far from the truth here, in order to decry a plan which, to say the least, is worthy of our approbation, for having suggested a method of applying to practical purposes a mode of generating heat which has hitherto been confined to the laboratory of the experimental chemist.

My calculation of the expense was made, as may be seen, upon the data furnished by Mr. Rutter, as to the quantities of fuel required to produce a certain effect. If he has erred in the proportions, my results are erroneous; but from the knowledge which I possessed of the cost of the articles, my impression was, and still is, that he had rather overrated the cost than otherwise.

If the cost of generating heat, upon Mr. Rutter's plan, should prove to be as great as by the present method, yet its saving of stowage and weight is sufficient to call forth the "inconsiderate admiration" of every one who has the charge of navigating a sea-going steamboat.

Trebor Valentine appears to have fallen into a very common error, viz. that if a certain weight must be carried on board a steam-vessel, it is of no consequence where it is put, whether on the deck or low down in the vessel's hold. Every nautical man knows that, with the same weight, a vessel may be either put into a good trim or be rendered utterly unseaworthy, according to the manner in which the weight is distributed, with regard to the centres of gravity and floatation.

It is a source of gratification to find that my views of the utility of the tanks for stowing tar coincide with those of Mr. Rutter; and I shall be glad to find that his plan is in actual operation on board some sea-going steamers; and I hope that you will not fail to give your readers the earliest information, with ample details of the results. To none will the information be more interesting than myself, for, although now unconnected with maritime affairs, I do not cease to feel a lively interest in every thing that relates to navigation and naval architecture. I am, yours, &c. GEORGE BAYLEY.

RESISTANCE OF FLUIDS TO BODIES PASSING THROUGH THEM.—The following notice has recently appeared of a paper entitled "An Account of a Second Series of Experiments on the Resistance of Fluids to Bodies passing through them," by James Walker, Esq. F. R. S. Civil Engineer; which was read before the Royal Society on June 6th, 1833.

The author, in a paper read to the Society in the year 1827, and printed in the Philosophical Transactions, gave an account of some experiments showing that the resistance of fluids increases in a ratio considerably higher than the square of the velocity, and that the absolute resistance is smaller than had been deduced from the experiments of the French Academy. In the present communication he states the results of his further inquiries on this subject. His experiments were made at the East India Docks, on a boat twenty-three feet long and six wide, with a stem and stern nearly vertical; one end being terminated by an angle of forty-two degrees, and the other of seventy-two degrees; and the resistance to the boat's motion being measured by a dynamometer. The results are given in tables; and it appears from them that in light vessels sharpness is more important in the bow than in the stern; but that the reverse is the case in vessels carrying heavy cargoes. From another series of experiments the author infers that the resistance to a flat surface does not exceed 1·25 lb. for each square foot, at a speed of one mile per hour; increasing for greater velocities, in a ratio considerably higher than the square of the velocity. The author concludes with some observations on the results lately obtained in Scotland, where great velocities were given to boats moving on canals, without a proportional increase of resistance.—[Proceedings of Royal Society.]

MALT AND TEA.—It is a curious fact, that the consumption of malt in England and Wales has been *stationary* for nearly half a century, though the population has more than doubled during that period. [M'Culloch's Commercial Dictionary, p. 723.] The tables, however, show that the public brewers, since 1787, have contrived to manufacture *one-third more* STRONG *beer out of the same quantity of malt!* So that both the quantity and quality of the national beverage have declined. The consumption of genuine tea has also been steadily declining, compared with the population. The sales of the East India Company show that the average consumption per head of *their* teas in 1801, was 1 lb. 13.6 ounces; in 1831, per head, 1 lb. 9.2 oz. showing a decline of full 17 per cent. during the last thirty years. As the fashion of tea-drinking has certainly not declined, it may be concluded, even after allowing for the increased consumption of coffee, either that the decoction has been made weaker, like beer, or that the shops have sold something else in place of the Chinese plant. The numerous convictions of persons having adulterated tea in possession favor the latter conclusion. Monopoly and high duties have operated unfavorably on public morals. "Lovers of tea or coffee," it is truly remarked, "are rarely drinkers:" and Raynal ascribes the sobriety of the Chinese to the use of these grateful beverages, which produce all the good, without the evil consequences, of more powerful stimulants.—[History of the Middle and Working Classes, second edition.]

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of February, 1834—(Lat. 31.10 N., Long. 91.59 W. nearly.)

Date. 1834.	Thermometer. Morn'g.	Noon.	Night.	Wind.	Weather, Remarks, &c
Feb'ry 1	32	54	50	calm	clear—white frost—clear all day and night—Red River rising
" 2	31	57	54	"	" " " " " "
" 3	38	66	60	"	" " light " " " "
" 4	41	70	58	"	" —clear all day and night
" 5	46	74	61	"	" " "
" 6	50	74	43	"	" " "
" 7	51	72	68	"	" " "
" 8	60	72	69	"	" —cl'dy morn. " "
" 9	54	66	63	"	" " "
" 10	47	74	68	"	" " "
" 11	50	73	64	"	" " "
" 12	50	77	71	"	" " "
" 13	50	76	70	s—light	" " "
" 14	53	75	72	s—high	cloudy morning—clear day—cloudy morning
" 15	60	51	51	w	" all day
" 16	48	51	50	calm	" " —night clear
" 17	42	68	61	"	clear—white frost, (*light*)
" 18	48	66	63	"	" —cloudy night
" 19	61	66	66	"	cloudy—foggy morning—thunder and rain all day and night
" 20	68	74	74	"	" all day
" 21	70	78	74	s—light	" " —martin birds appeared this evening
" 22	70	78	75	"	" " —lettuce fine and large
" 23	70	74	73	"	" —showers all day and night
" 24	71	76	66	"	" —evening wind N
" 25	52	54	46	N—high	" all day and light showers
" 26	42	45	45	N—light	" and light showers
" 27	44	46	45	calm	" —rain all day
" 28	45	53	49	"	" —night clear

Red River rose this month 2 feet 3 inches—below high water, 5 feet 6 inches.

CAPACITY OF BODIES FOR WATER.—As it may be interesting to many to know the comparative as well as the positive absorption of water by various bodies, we subjoin the following table, the details of which were made with care. The weight of each substance was ascertained before immersion; next, when the water ceased running and began to drop; and, lastly, when all dropping had ceased, and the bodies were in that state in which they may be supposed to be full of moisture.

	Dry.	*Dripping.*	*Done dripping.*
Flannel.....	144 grs.	1553 grs.	700 grs.
Woollen Cloth..	56 "	370 "	191 "
Linen	375 "	2110 "	1050 "
Calico.....	115 "	1150 "	450 "
Cambric Muslin.	95 "	883 "	307 "
Very fine do.	54 "	715 "	297 "
Glove Leather..	106 "	1170 "	677 "
Kid do. ..	172 "	770 "	421 "
Shoe do. ..	95 "	194 "	177 "
Sponge.....	185 "	2440 "	2070 "

From these data the following table may be constructed, to show in the first instance the absorbing powers, and, in the second place, the retaining powers, for moisture, of the various bodies thus experimented upon:

Flannel absorbed 11 and retained 5 times its weight of water				
Woollen Cloth	6½	"	3½	"
Linen Cloth	5½	"	3	"
Calico	10	"	4	"
Cambric Muslin	9	"	3½	"
Fine Muslin	13	"	5	"
Glove Leather	11	"	6½	"
Kid do.	4½	"	2½	"
Shoe do.	2	"	2	less a fraction
Sponge	13	"	11	"

From these results, it may be seen that, although some substances, in the first instance, take up an equal or nearly an equal quantity of water with the sponge, such as the flannel, fine muslin, and glove leather, yet their powers of retaining the same are very far inferior.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 198.)

We shall proceed to explain how the knee joint and hip joint, independently of the exertion of muscles, become firm in the standing position, and when at rest; but before we enter upon this, let us understand the much-talked-of demonstration of Borelli, who explained the manner in which a bird sits upon a branch when asleep. The weight of the creature and the consequent flexion of the limbs drawing the tendons of the talons so as to make them grasp the branch without muscular effort.

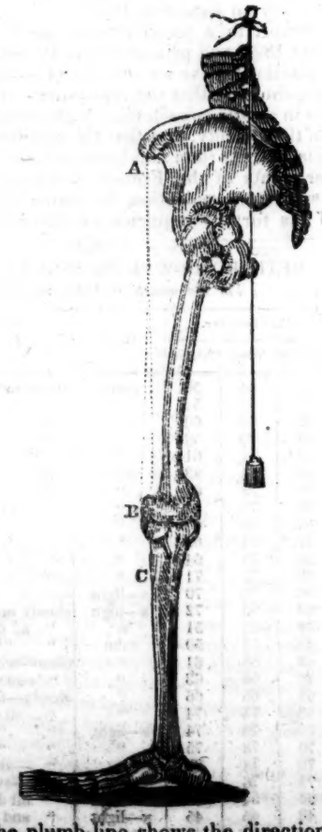
Fig. 13.

The muscle A passing over the joint at B, and then proceeding to the back of the leg, and behind the joint at C, and so descending behind the foot at D, it extends to the talons; and the weight of the bird bending the joint B and C, produces the effect of muscular effort, and makes the claws cling.

But why should the anatomist have recourse to this piece of comparative anatomy, when he has so fine an example in the human body? And one which is much more interesting, as, in fact, it is the foundation of reasoning upon the diseases and accidents of the limb. If this beautiful arrangement in the healthy and perfect structure of a man's limb be not attended to, it would be easy to prove that many important circumstances in regard to disease and accidents must remain obscure.

The posture of a soldier under arms, when his heels are close together and his knees straight, is a condition of painful restraint. Observe, then, the change in the body and limbs, when he is ordered to stand at ease; the firelock falls against his relaxed arms, the right knee is thrown out, and the tension of the ankle joint of the same leg is relieved, whilst he loses an inch and a half of his height, and sinks down upon his left hip. This command to "stand at ease" has a higher authority than the general orders. It is a natural relaxation of all the muscles, which are consequently relieved from a painful state of exertion: and the weight of the body bears so upon the lower extremity, as to support the joints independently of muscular effort. The advantage of this will be understood when we consider that all muscular effort is made at the expense of a living power, which, if excessive, will exhaust and weary a man, whilst the position of rest which we are describing is without effort, and therefore gives perfect relief. And it is this which makes boys and girls, who are out of health and languid, lounge too much in the position of relief, from whence comes permanent distortion. This figure represents the bones of the leg.

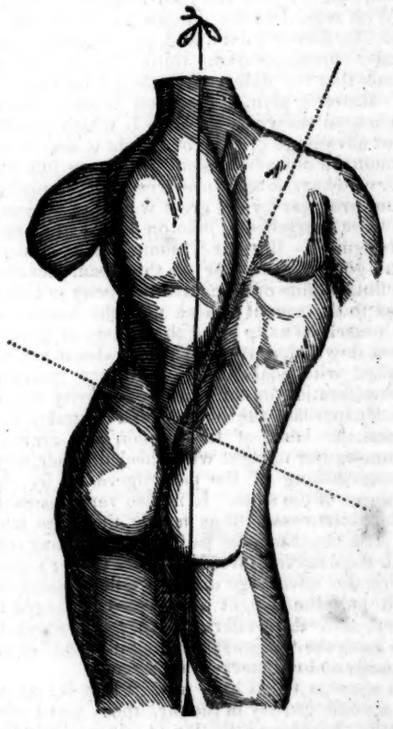
Fig. 14.



The plumb line shows the direction of the gravitation of the body falling behind the head of the thigh bone. Now, if it be understood that the motions of the trunk are performed on the centre of the head of the thigh bone, it must follow that the weight of the body in the direction of the plumb line must raise the corner of the haunch bone, at A. From this corner of the bone, a broad and strong band runs down to the knee-pan, B, in the direction of the dotted line. The powerful muscles which extend the leg are attached to the knee-pan, and, through the ligament at C, operate on the bones of the leg, stretching them and preventing the flexion of the joint; but, in the absence of the activity of these muscles, the band reaching from A to B, drawn, as we have said, by the weight of the body, is equivalent to the exertion of the muscles, braces the knee joint, and extends the leg; and we have before seen that the extension of the leg fixes the ankle joint. Thus the limb is made a firm pillar under the weight of the body, without muscular effort.

When the human figure is left to its natural attitudes, we see a variety and contrast in the position of the trunk and limbs.

Fig. 15.



This position of the body resting on the lower extremities throws the trunk into an elegant line, and places the limbs in beautiful contrast, as we see in all the best specimens of sculpture.

Now, that we have understood that the lower extremity becomes in some positions a firm pillar, it is the more necessary to observe the particular form of the head of the thigh bone. (See fig. 16, next column.)

It is here seen that the head of the bone A stands off from the shaft by the whole length of the neck of the bone B; the effect of this is, that, as the powerful muscles are attached to the knobs of bone, C, D, they turn the thigh bone round in walking with much greater power than if the head of the bone were on a line with the shaft. They, in fact, acquire a lever power by the distance of D from A, as, during the action of these muscles, the limb is stiff; the rolling

Fig. 16.

of the thigh directs the toe outwards in walking.

When the weight of the body is perpendicular over the ball of the great toe, the whole body is twisted round on that point as on a pivot. This rolling of the body on the ball of the toe, and consequent turning out of the toes in stepping forward, is necessary to the freedom and elasticity of the motion. The form of all the bones of the leg, and the direction of all the muscles of the thigh and leg, combine to this effect. So far is it from being true, as painters affect to say, that the turning out of the toes is the result of the lessons of the dancing master.

A certain squareness in the position of the feet is consistent with strength, as we see in the statues of the Hercules, &c.; but the lightness of a Mercury is indicated by the direction of the toes outwards. In women there would be a defect from the breadth of the pelvis, and a rolling and an awkward gait would be the consequence; but in them the foot is more turned out,, and a light elastic step balances the defect arising from the form of the pelvis. Any one may be convinced of this by observing people who walk awkwardly, especially if they walk unequally. Look at their feet, and you will see that one foot goes straight forward, whilst the other is turned outwards, and that when they come upon the straight foot, they come down awkwardly, and have no spring from it.

Observations on the Prevailing Currents of the Ocean and their Causes. [From the United Service Journal.]

There are few branches of science, connected with the phenomena of the surface of the globe, which have hitherto received less consideration than those oceanic currents which every-where prevail more or less in the great body of the waters; and it seems surprising, that in a country situated like our own, and so intimately connected with the element which forms our rampart, as well a the great medium of our wealth and greatness, so little has yet been done to trace this continued circulation to its true and proper source.

Much expectation on this subject was lately excited by the announcement of Major Rennell's work "On the Currents of the Atlantic;" and it was but natural to expect, from the pen of so able and experienced a writer, some elucidation of this hitherto obscure subject. The expectations entertained as to this posthumous work have in many practical points been fully answered; the *existence* and *effects* of many important currents have been explained in a manner that cannot fail to be highly useful to every practical man. But in tracing the *cause* of this mysterious movement, Major Rennell seems merely to have followed the usual track that had before been taken by all former writers on the subject, and has thus been led to attribute *to the winds*, effects which owe their real origin to the main cause of these very winds themselves.

It has long been known, that the prevailing currents, both in the air and in the waters, have a regular set within the tropics, from east to west; and as atmospheric currents in these latitudes, under the name of the *Trade Winds*, have been justly attributed to the rotatory motion of the earth on its axis, it has been incautiously adopted as a principle, that the currents of the ocean arise from the action of the prevailing currents of wind, both in the tropics and in other parts of the earth.

"The winds," says Major Rennell, "are, with very few exceptions, to be regarded as the prime movers of the currents of the ocean; and of this agency, the trade winds and monsoons have by far the greatest share, not only in operating on the larger half of the whole extent of the circumambient ocean, but by possessing greater power, by their constancy and elevation, to generate and perpetuate currents; and although the monsoons change half yearly, yet the interval during which they continue to blow in each direction is long enough to produce effects *nearly similar to the constant trade winds;*" that is, although the winds do not always blow from east to west, but are, during one half of the year, *north-easterly*, and for the other half, *south-easterly*, yet the currents in the open ocean, within the tropics, are *constant*, from east to west, *and thus do not follow the direction of the winds from which they originate.* "The winds, then," concludes Major Rennell, "operating incessantly on the *surface* of the ocean, cause, in the first instance, a gentle but general motion *to leeward*, (as is proved by ships being always to leeward of their reckoning in the trade winds;) and the waters so put in motion form by accumulation streams of currents."—[Rennell on the Currents of the Atlantic, p. 6.]

Setting out, then, upon this principle, in his account of the existing currents of the ocean, as far as they are at present known, it cannot excite surprise, especially if this theory of the origin of the currents can be proved to be erroneous, if many facts are stated in the work of Major Rennell which are utterly at variance with the theory itself; and the consequence naturally is, that, however distinct and instructive the information may be with respect to the individual currents, and the best mode of combatting their influence, we rise from the perusal of the work more than ever uncertain as to the true *cause* of those remarkable streams which are known, in numerous instances, to run in the very face of the steady and prevailing winds which are here stated to be the occasion of them.

In these observations upon Major Rennell's work, we must not be understood, however, as detracting in any way from the highly useful tendency of it in a practical point of view, for which it was chiefly intended but we beg to offer a few remarks as an attempt to elucidate this obscure but interesting subject, which, like other questions relating to an extended system, must first be viewed on a great and general scale, before we can safely venture to account for the minor portions of it, which come within our more immediate and personal observation.

It appears strange, that while the aerial currents of the atmospheric fluids within the tropics have been so long attributed to their proper cause, it should never have occurred that *the same cause* might probably have *the same effect* upon the aqueous fluids which cover so large a portion of the globe, and that the currents of the ocean might thus be mainly attributed, like the trade winds, to the rotatory motion of the earth upon its axis. The more powerful and constant of the currents of the tropics having a general tendency from east to west, might be supposed likely to suggest this idea. But if suggested, and put to the proof by actual observation *on a limited scale*, it is probable that the theory would be rejected as inconsistent with the facts, for while the trade winds are found to be in a great degree constant, like the cause which produces them, and only varying a few points to the north or south, according to the season, and the position of the earth with regard to the sun, the streams of the ocean are found to set in various directions, and frequently in *opposition* to the supposed cause; we could not, therefore, feel surprised if some other cause was immediately sought for.

In order, however, to set this point in a proper light, we have only to examine with attention the effects produced by a rapid and rocky descent on the small scale of a river or brook. We here find the general tendency of the stream taking, *as a whole*, a decided course, (say from east to west;) but if we confine our view to the minor parts of this stream, and watch the movements of any small floating substance, as it follows the various eddies and countercurrents occasioned by the rocky impediments in the bed of the river, we shall with difficulty bring ourselves to believe that the general tendency of the whole stream is from east to west, as we frequently find the floating bodies taking a direction from *west to east*, and, at some particular points, even from north to south. This is taking a limited view of what ought to be considered on a wider scale, and may serve as an illustration of what actually takes place when we form a theory for the whole currents of the ocean, by merely observing some particular portions of it.

What takes place in a fluid on a small scale will assuredly occur also on a larger, as both are subjected to the same general laws; and because the trade winds are not so subject to opposition, and consequently to eddies and counter-currents, as the equatorial streams of the ocean, we are not, therefore, to conclude that both fluids are not originally set in motion by the very same cause, for it is obvious that, though their general tendency may be (as indeed it really is) *from east to west*, the numerous interruptions opposed to a regular movement in that exact direction may often occasion an extensive re-action in a direction to all appearance opposite to it.

Let us for a moment suppose the earth to be a body *at rest*, or at least without rotation

on an axis; and let us further suppose no dry lands to exist above the surface of the waters, with which latter the sphere would thus be entirely covered. Let us also in idea remove its atmospheric envelope, that all friction or pressure may be removed between the two fluids of air and water: what, then, could we expect to find under such an arrangement? We could not look for any circulation in the watery covering, under such circumstances. Every thing would remain in perfect repose; and unless the waters were preserved in purity by some principle not now in existence, they would soon become corrupted and unsuitable to the nourishment of organic life. But let us now suppose a sudden impulse of rotation to be given to the sphere with its fluid covering; and let us consider what would be the effect of the rapid rotatory movement upon the circumambient waters. If a plate or other shallow vessel containing water be impelled in any direction horizontally, the fluid, participating but little in the impulse, *is left behind* on the spot whence the movement began; it cannot keep pace with the motion of the solid. In the same manner the globe would revolve upon its axis, while the superficial waters would remain nearly stationary, and would have all the appearance of moving in opposite directions, *seeming* to transport floating bodies from east to west, while, in point of fact, the earth *was passing them* from west to east. Thus we perceive that, in the supposed case which we have now put, the steady movement of the solid ball would be imperceptible, while floating bodies on the surface of the water would visibly become more distant in an opposite direction. This apparent movement would naturally be greatest in the equatorial regions, being the outer rim of the revolving wheel; while towards the axis the waters would be little, if at all, affected by the rotation.

Let us now, for a moment, suppose our globe to be surrounded with its atmosphere, or envelope of fluids of a different nature. Without rotatory movement in the solid, there could be no semblance of regular movement in this aerial fluid, and we could therefore have no trade winds. Other partial winds there would be, it is true, occasioned by heat acting on the elasticity of the air, and by a constant succession of expansion and contraction arising from various degrees of temperature. But if we suppose, as before, a revolving and rapid motion to be given to the sphere thus surrounded with its airy envelope, a similarity of cause would immediately occasion a similarity of effect. The *trade winds* would be produced in the equatorial regions, while the circulation of the atmosphere in the more temperate and frigid latitudes would be carried on by the changes of temperature in the same manner, or nearly so, as if there had been no rotatory motion at all.

The effect of the trade winds, and, by analogy, of the oceanic currents, may be simply illustrated by the example of a well-mounted horseman in a calm day. While he remains still, not a breath of air blows. He moves slowly, but produces little effect in deranging the quiet of the atmosphere. The more rapid his course, however, the more violent will be *the current of air* which *seems* to blow in his face whichever way he goes; and even in the case of a moderate breeze, he may "outstrip the wind," and make it seem to blow in an opposite direction.

It must be obvious, then, that the effects of the revolving motion of our globe must be the same, both upon *the fluids of the air*, and upon *the fluids of the ocean*, and consequently, that the regular *trade winds*, and the regular *equatorial currents*, proceed each separately from this cause, and would equally exist even in the absence of the other. But it may be urged, that the trade-winds are much more constant to their course than the equatorial currents, and it therefore seems difficult to imagine that they can both proceed from the same cause. The reply to this objection is extremely simple, when we look a little deeper into the nature and circumstances of the two fluids. The atmospheric fluid is above the surface of the solid, and is but slightly deranged by the asperities and interruptions it may have to encounter, in the form of the islands, continents, or mountains of the earth. Some derangement actually does take place, however, from these causes, but it bears no comparison to the counter-currents and eddies which are found in the ocean, arising from the numerous and insurmountable obstacles which are thrown in the way of the regular equatorial streams. In the supposed case, which was before put merely for illustration, we considered the globe to be entirely covered with the waters. Such is not, however, the reality now, although this preternatural effect has certainly existed, on one most memorable occasion, the evident traces of which attest the fact on every part of the surface of the globe. Such is not, however, the usual state of things; on the contrary, the ocean occupies about two-thirds of the whole surface, while the remainder is broken into a thousand dispersed fragments, each opposing its solid form, as the sphere revolves, to the regularity of the oceanic movements. If the smooth and polished wheel of the turner be made to revolve in water, the movement, however rapid, produces little or no commotion in the fluid; but let the polished wheel be changed for one having a toothed or unequal edge, and we shall instantly perceive a very opposite effect. The effects of the paddles of the steamboat on smooth and tranquil waters will also bring this subject home to the mind of every one. We cannot then look for the same regularity of movement in the equatorial currents of the ocean that is perceptible in the equatorial currents of the atmosphere.

AGRICULTURE, &c.

[*From the New York Farmer.*]

Suggestions relative to Florists' Work for April and May. By the EDITOR.

Although the edible productions of the vegetable kingdom are regarded as the substantial bounties, and flowers as the smiles, of Providence, yet we cannot dispense with the latter. We should seek our bread in sorrowfulness were no flowers strewed in our path. Did we not meet the animated and cheering countenances of our fellow creatures, did we not see much in all our journeying through life, to remind us that more than Eden bowers await those who make their fellow creatures smile, how miserable should we be! How kind is Providence! Though we may not have it in our power either to feed the hungry or to clothe the naked, yet we can all produce that effect on the countenances of others, that is so lovely and beautiful, and so reciprocally cheering to the heart. But alas! how many are they who despise this blessing; and instead of laboring to diffuse smiles around them, cause sorrow to corrode the heart, and distress to disfigure the countenance. And how many there are, who, like our Father in Heaven, have abundance to feed and clothe, and to smile on others, and yet, alas! unlike Him, do neither. But let us all endeavor to unite our efforts with those of lovely spring, to make all nature smile. This is peculiarly the province of the fair sex.

SOIL.—As a general rule, flowers require a sandy loam, made rich by fermented manures, particularly by rotted leaves or vegetable mould. The ground should be well spaded and rendered as fine as possible. If the seeds are put in pots the soil should be sifted.

SITUATION.—Very few flowers require the sun for any length of time. They succeed better when in a slight shade the greater part of the day, particularly when the heat is most intense. Light and pure air are requisite.

TIME OF SOWING.—From the latter part of April to the first of June flower seeds are put in the ground. The depth, if the seeds are small, should not exceed from one fourth to half an inch. If dry weather is apprehended, a board laid on the drill for two or three days will prevent the moisture from being evaporated. Flower pots are used for the same purpose.

PLAN OF ARRANGEMENT.—Neatness, simplicity, and convenience, should be the characteristics, particularly of small gardens. Ovals and other easy unstudied figures are preferable to squares, diamonds, hearts, and triangles. The plants should be arranged according to their height, so that the high ones do not conceal the others.

PROPAGATION.—Every lady should know how to propagate plants by layers, cuttings, divisions, and offsets. Many of the most valuable plants are increased much more readily by these methods than by seeds.

DOUBLE FLOWERS.—Linnæus calls these *monsters*, a term very inappropriate, to say the least of it, for such beautiful productions of nature. Most double flowering plants do not produce seed, consequently they are increased by other methods. The less completely double they are, the more seeds they contain. Double flowers are produced by fertilizing half-double varieties, by cutting out the anthers, by fertilizing or crossing with different colors, and by single plants set out among those nearly or quite double. The seeds of these are then sown, which will probably produce some double flowers.

VARIABLENESS OF FLOWERS.—Exposure, culture, soil, &c. have a tendency to vary the color and size of flowers.

CURRANTS.—The currant is one of the most useful of all our small fruits. As soon as their size will answer, they are made into pies, so that they are in use from June until September. They are great and constant bearers, and will grow upon all varieties of soil.

Although the white and red currant are claimed as natives of the Island of Great Britain, yet they flourish much better in the northern part of the United States than they do in that country.

As the currant is useful, the bush may be rendered quite ornamental in gardens, if proper pains are taken with them at first.

Those who are wishing to have a good supply of fruit, and at the same time have their bushes ornamental, should procure as many straight well proportioned sprouts, of the last

year's growth as he wishes to cultivate. Let these be cut off a couple of inches above where they commenced the year's growth, or where the buds become regular; with a sharp penknife scallop out each bud beginning at the bottom, and proceeding up, at least one foot, or so far as you wish the stem of your bush to remain clear of limbs. In doing this be careful that not one bud is left, on what is designed to go into the ground, or on what is designed for the body of the bush. Stick the sprouts thus prepared in the ground, either where they are to remain, or they may be set one year in nursery form, and afterwards transplanted. Bushes properly prepared in this manner are as sure to live as those that have roots, *and never will sprout from that part where the buds were taken from.*

Every one, who has attempted to train a correct bush, as a standard, knows well what a task it is to keep down the sprouts from the bottom, which if left render it very unsightly. When bushes are trained in this way, the tops may be kept open, so as to admit the sun and air, and the currants will not only be larger, but better flavored.—[Goodsell's Gen. Farmer.]

Improvement of Wool.—How far the farmers of this country may find the following article, from the London Farmer's Magazine, serviceable to them, we are unable to say; but it strikes us that the salve recommended would be beneficial to sheep, if applied after they are sheared.

Mr. Editor,—From the increasing demand for white wool, many of the store farmers of this country have of late years allowed their flocks, even in high and exposed situations, to winter without a salving of any description whatever. This practice, except in some very peculiar situations, can seldom with propriety be continued above a year or two, as under this treatment both the quantity and quality of the wool invariably fall off, and seldom fails to produce a *hemphy* fleece, or, in other words, the wool gets imbedded with dead white hairs, which renders it only fit to be applied to inferior purposes, and thereby materially reduces the value of the fleece. Various salving mixtures have been recommended and adopted, but in few instances have any of them met with the approbation of the manufacturer; and when it so happens that the wool has been so heavily laid that it cannot be submitted to the process of manufacture without being previously scoured, much labor and expense are thereby incurred, and consequently the price of the wool considerably increased. Wool after having been scoured is much more liable to get discolored during the manufacturing process, and ultimately an article of less purity in color than goods which have been produced from the material as shorn from the sheep's back. Some wool growers, with anxiety to produce a fleece in a very slight degree removed from that which has been allowed to remain perfectly free of any salving whatever, have applied a greasing of animal or vegetable oil, but without the necessary precaution of adding a slight proportion of the refined spirit of tar, consequently the wool is of a yellow tinge, which renders it in a great measure unfit for the manufacture of white goods, and therefore a very considerable depreciation may be said to have taken place on the value of the material, in consequence of the injudicious application of oiling. Several of the most extensive sheep farmers in Peebles-shire, some of them indeed in the very highest and most exposed situations in the county, have for the last two years salved their flocks with powdered crude white arsenic and black soap, in the proportion of one pound of arsenic to three of soap, which are mixed up with seventy bottles of water, and this is considered sufficient for three score and ten sheep, being at the rate of a bottle for each, the expense of which does not exceed sevenpence a score. Of all salvings hitherto used in this county for the producing of white wool, this is allowed to be decidedly the best. The moment it is applied, all vermin of whatever description die instantly, and are never again to be found upon sheep which are salved with this composition; and it is the opinion of some of the most experienced in sheep farming, hat stock under this treatment will in a very great measure be exempted from the louping-ill, a disease which kills thousands annually. From the nature and properties of the composition, many of the diseases which unsalved flocks are liable to be infected with, are at once eradicated or prevented by the application of this salve, which also destroys all inclination for rubbing against foggy or grassy banks, and thereby prevents the wool from getting imbedded with impurities, which are not unfrequently found to such an extent, that the wages of the laborer in picking it sufficiently adds so much to the price, that too often the manufacturer is obliged to apply it to an inferior purpose; and even when the material has been carefully looked over by the most discerning eye, previous to its being submitted to the process of manufacture, it frequently happens that thousands of these impurities make their appearance in the finished article, which in a great measure renders it unfit for the purposes for which it was intended. Sheep salved in this manner are seldom or never found to die in consequence of falling awald, or the wool to pell or fall off previous to clipping time. However, in place of soap and water, I would with much confidence recommend that the arsenic should be mixed with butter and cocoanut oil, and only to that extent which is necessary to give fixity to the arsenic, which, with a slight addition of the refined spirit of tar, is a salve which I have no hesitation in pronouncing is calculated to produce wool of the purest possible description. Under this treatment the fleece will not only be considerably finer, but very materially increased in quantity, independent of any additional weight that may be added by the application of the butter and cocoanut oil, and will be found to possess in a much greater degree the felting properties; consequently much more valuable as a clothing wool, or indeed for the manufacture of any description of goods to which the material can possibly be applied. Wool salved with this composition is also admirably adapted for mixing with skin wool, which has been removed from the pelt by the application of lime; and it is a well known fact, that when manufactured by itself, it is extremely liable to gild or get discolored during the hot days of the summer. After the necessary process of oiling has been performed, a very slight admixture of the salve material acts as a complete security against the skin wool getting discolored in the least degree, throughout all the various stages of manufacture; and even in scouring, the quantity of soap generally required would be considerably reduced by adopting the mixing system here recommended.

Your giving a place to the above in your paper will oblige your most obed't serv't, X.

Mr. Coke—Devon Cattle.—Those who are exerting themselves to improve the husbandry of the country should not, on reading the following remarks of one of the best judges of cattle in England, the Rev. Henry Berry, be discouraged:

It is now about forty-two years since Mr. Coke, very properly considering the difficulties he had to encounter on his light poor soil, began to breed Devon cattle, and it is not a little creditable to his judgment that he has, during that period, scarcely referred to any thing which may, properly speaking, be called a cross—certainly, to none of which he could permanently avail himself—and yet his Devons, take them altogether, are by far the best I have ever seen. I much doubt whether the county of Devon can produce such an animal as one of Mr. Coke's bulls. I am totally free from prejudice on these matters, and, therefore, candidly admit the ox in question to have been, in my judgment, at the time I saw him, the most *complete* I ever put my hand on.

The dairy of Devon cows appears to be, and I am assured is, highly productive, each cow, no matter what her other excellences, being rejected which proves a bad milker. They present great uniformity of character, with all the genuine distinctions of the pure North Devon cattle, and, with great aptitude to fatten, possess precisely the compact bodies and short legs, which constitute the *multum in parvo* I have so often advocated. Much as I admire the Norfolk husbandry—much as I have seen to admire in the zeal of Mr. Coke's tenantry to evince their gratitude and respect, there are two things which I must censure and deplore. While the judicious and spirited improvements in tillage of this great landed proprietor have been forcing conviction, and obtaining adoption, his efforts as to the stock of the country have been comparatively vain, and he stands alone, a solitary instance of a man who for forty-two years has produced proof, and invited investigation into the merits of his Devons—has offered and committed costly sacrifices to carry his useful object, without, except in few instances, being able to induce his tenantry to adopt a profitable breed of cattle, for an unprofitable one—a system of economy devoted to the most useful end, in lieu of a system of extravagance, purchasing its advantages at a rate beyond all chance of remuneration. With, as I said before, few exceptions, the miserable and unthrifty homebreds are the cattle kept; generally speaking, little or no regular stock of cattle is maintained, and during the present year, in the month of September, short-horns, so called,) and every wretched specimen conceivable of all that is bad, were consuming oil-cake in the yards, for the purpose of converting the straw to manure. On this subject Mr. Coke feels, and well he may, much disappointment, but it is not confined—this blindness to their true interests—to the article of cattle alone. In sheep it is the same; and prepared as I am to show, hereafter, that no breed in the island now equals, in profit, that of Holkham, I shall only here observe, that so far behind the rest of the world are the majority of Norfolk men on the subject of stock, that they appear to select with a view to obtaining those qualities which well-informed men would pronounce bad, and invariably reject.

Weeping Trees.—Mr. William Anderson, Curator of the Botanic Garden at Chelsea, writes as follows to the Prussian Gardening Society. Fascicles or bundles of shoots are often observed on trees, which resemble birds' nests at a distance; but, when examined, they prove to be a cluster of small twigs. Such bundles are observed on different trees, but more frequently on the white or common birch tree. In the year 1808, I observed such a bundle on a Cratægus (Mespilus) Oxyacantha, (hawthorn,) and grafted young thorns with them, which, in two or three years, produced beautiful weeping branches. About the same time I observed such a bundle on Ulmus campestris (common elm,) eyes of which were budded on healthy young trees, and every one produced a long hanging shoot. According to this observation, it would be very easy to produce a large collection of drooping or weeping trees. Our gardeners, however, multiply no species so numerously as the Fraxinus excelsor var pendula (weeping ash); which variety often retains its hanging character when raised from seeds. We possess several such trees, of about ten feet in height, which were raised from seed of the original tree, obtained in 1780 from a nurseryman, who found it a few years previous to that in the neighborhood of Newmarket, in Cambridgeshire.—[Hort. Reg.]

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LITERARY NOTICES.

No. XX.

Boyd's Grove, Illinois, Jan. 25th. 1834.

It was so long since I had seen a stone at all deserving the name of a rock, that I took a good deal of satisfaction in scaling the bluffs of the Illinois, and traversing the adjacent ravines, before getting out on the prairie the morning that I left Ottawa.—In one of these rocky gullies—which run generally at right angles to the river, and with their precipitous walls in one place, and cavernous passages beneath the jutting limestone in another, often form some picturesque dell, or afford a romantic glimpse of the open country beyond—I saw the first cascade I have met with since leaving Pennsylvania. The fall was not more than ten feet, but the column of water being frozen in a solid sheet as white as the purest porcelain, presented a very singular appearance as it raised its pale glistening front beneath a canopy of stunted cedars, whose green branches impended from the rocks above. Our sleigh after winding for sometime among this broken ground, and passing over one or two small but beautiful pieces of bottom land lying among the ravines, reached at last the top of the bluff, where, instead of descending on the other side, the level prairie extended as far as the eye could reach beyond. A few hours drive brought us to a log cabin, which was our place for dining and changing horses, and here we found that owing to the newness of the route, arrangements were not yet completed for the stage going farther. Hhearing a stranger speaking in terms of enthusiasm of the fine view from "Starved Rock"—a detached crag some 200 feet high, on the banks of the Illinois, where one band of Indians were surrounded and starved to death by another (I refer you to "Flint's Valley of the Mississippi," for the legend)—I made arrangements to visit the spot in the morning. A chill north easter swept over the bleak prairie as my travelling companion and myself, mounted upon two miserable nags, neither of which were shod, struck on an Indian trail, that brought us in an hours ride to the craggy and precipitous banks of the Vermillion river, which it was necessary to cross. A sickly looking, but rather interesting woman came out of a poor looking log hut, beside which, housed under a few boards, stood a handsome barouche—to direct us where to descend the bank; and my friend on foot leading his horse, mine followed, trembling, after him, and notwithstanding the steep path was glazed with ice, we descended the first pitch in safety. Pausing here for a moment, the confused masses of rock with trees and shrubs of all kinds growing in their crevices, reminded me as I looked around, of more than one scene of the kind in the river counties of my native State. It was now my turn to lead down the next pitch, which led to the frozen bed of the river. Upon gaining the edge I perceived that the descent was a perfect glare of ice, and pausing a moment to hand a loaded gun, which I carried, to my companion, lest it might be discharged in the accident which I anticipated: my horse lost his footing even as I turned in the saddle, and falling flat over upon me, down we slid together. I had not gone two yards, however, before a small jutting rock brought me, but little bruised, to an anchorage, while my unfortunate consort, after sliding over a part of my person, went, though struggling fearfully to regain his feet, slipping to the bottom.—He landed at last erect, with his face up the ascent, and though now on the level ice of the river, the poor brute seemed to think he was still midway on the declivity he had been hurried over so roughly—for without looking at all behind him, he stood trembling for an instant, and then in spite of all the outcry we could raise to keep him back, commenced ascending to where we stood, and actually persevered till he had gained the place from whence he had started.—The only way now to effect our purpose, was for one to go below and the other to drive the horses down to him. This we indeed did, and I do not know when I have been more amused, than upon seeing my worthy Bucephalos, as if taught by past experience, quietly—when he found he must go—placing himself upon his haunches, and sliding down the little hill with a degree of coolness and skill, that would have been envied by the boldest schoolboy on *Flattenbarrack*. Crossing the Vermilion we were compelled to drive our horses in the same way up the bank on the opposite side, and by catching hold of the branches of trees, drag ourselves after them as we best could. Once on the height nothing but a level plain of rich prairie land lay between us and the bluffs of the Illinois It was crossed here and there at intervals of a few miles, with Indian trails, about a foot in width, and worn as deep as if they had been trod for centuries. They ran in various directions, and were generally as straight as the flight of an arrow. A heavy rain throughout the previous night had swept all the snow from the prairie, and these black lines drawn over its brown surface, were now perceptible at a great distance. A long reach of woodland immediately before us, indicated our approach to the Illinois bottoms, but on entering the timbered ground, where the snow still lingered in considerable quantities, we found ourselves on the slippery bluffs, a hundred feet above the level of the river opposite, without the possibility of descending to its bed. These bluffs were divided about every half mile by the romantic ravines, already described; and having now discovered that we had entirely missed the road to "The Starved Rock," it only remained for us to attempt descending through these passages, and find the place by a route of our own. We led the way by turns, and urging our unwilling horses down the frozen beds of the little streams, which impart their coolness in autumn to these sequestered dells, we tried three ravines in succession, without attaining our object. One would bring us up against a dead wall of limestone, in the crevices of whose base the rill we had been following sadly disappeared, a second carried us to the abrupt edge of a precipice, about fifty feet above the river, whose rich bottoms, extending far away below, reminded me, with the occasional copses and detached clumps of trees which studded them, of points of views in the valley of the Mohawk. Nothing, on so small a scale, could be more picturesque, than the nook to which the third ravine led us. It was to the upper edge of a double cascade, over the second fall of which an arch of rock projected, so as to shut out from view the basin into which the water finally fell below. The passage through which we reached the spot, was a mere fissure in the side-hill; and when, not wishing to get my feet wet, I urged my horse to the brink of the little cascade, the long icicles pendant from the hanging rock above were almost within reach of my riding-whip. A number of gnarled and stunted cedars, "moist trees, that have outlived the eagle," fling their dusky branches over the chasm, and when summer foliage glitters on the tall stems, whose naked boughs project above them, the sun must be wholly excluded from this cool retreat.

Our horses were so fagged out when we extricated ourselves from this ravine, that we did not think it well to try another; and my companion being afraid of freezing his feet, which were wet from his having dismounted at the most difficult parts of the descent, I was sorry to be compelled to give up the search and return to our lodgings, after an eight hours' ride, without having seen the interesting point we had taken so much trouble to attain.

The stage proprietor resident at Chicago had arrived at the farm house during our absence; and hearing that two gentlemen were detained upon the road, had, with great politeness, at once taken measures to send us on the next morning. The room, too, in which we had slept before—four in two beds, and three on the floor—had now been vacated by five of its occupants, and my companion and I each appropriated a couch to himself. We were hardly warm under the cover, however, before the tramping of horses, with the sound of travellers' voices, was heard without; and the good dame thrust her head into the room in the vain expectation of shewing them an unoccupied bed. My companion pretended to be in a sound sleep; and I intimated that I should betake myself to my buffalo robe and the floor, in case a bed-fellow were thrust in upon me: whereat, the kind lady was exceedingly miffed; and we could hear her through the board partition a moment afterwards, expressing herself after this amiable fashion; "Ugh! great people, truly!—a bed to themselves—the hogs!—They travel together—and they eat togther—and they eat enough, too—and yet they can't sleep together!" Here the husband, an intelligent middle-aged, man, who did everything to make our situation comfortable during the thirty-six hours we spent at his cabin, interposed, and silenced his better half; and the new comers, wrapping themselves in their cloaks before the fire, in a few minutes all became still about the establishment.

The good dame, who must have been a fine looking woman in her day, and was, I believe, in spite of her scolding ways, really well disposed towards us at heart, gave us a capital cup of coffee, and a kind farewell in the morning. A four-horse wagon, with an active driver, quickly accomplished a mile of rough road through the grove, and brought us once more to the edge of the smooth prairie. I can conceive nothing more desolate than the appearance of that boundless plain. The fires had traversed it in the autumn as far as the eye could reach, and the snow having now disappeared entirely from the upland, the black and charred surface was all that met our vision wherever it wandered. A dark sullen sky which lowered over head added not a little to the gloominess of the prospect; and the day being excessively cold, our ride for the next fifteen miles over this dreary plain was anything but agreeable. At last we came to some broken ground, dotted here and there with a handful of shrubbery, from which every moment a pack of grouse, and occasionally a bevy of quails would rise. The little village of Hennepin—called after father Hennepin—next hove in sight; though it lay so sheltered along the banks of the Illinois, that we were nearly upon the hamlet before its vicinity was discoverable,

After stopping an hour or two to dine and feed our horses, we left the driver to get down the steep bank, which, though not rocky, is about 50 feet high, and very precipitous on that side of the river, while my friend and I descended to the ice, and walked over the river, which was here a broad and noble stream, with some beautiful alluvial islands on its bosom. The difference of temperature here and on the bleak prairie above, was astonishing; and when I sat down upon a fallen tree among the tangled vines of the rich bottom opposite to Hennepin, and watched a flock of green paroquets fluttering among the wych-elms, which here and there skirted the shore, while the sun for a moment piercing his murky veil touched with gold the icicles that glazed their drooping branches, I could fancy myself transported to a different climate. The driver overtook us at last, and then we commenced making our way through a timbered bottom, which, for appearance of rank fertility, excelled any spot I have ever beheld. The trees, which were of enormous size, seemed chained together at every point, by the hugevines which clambered to their very summits, locking the stately stems in their ponderous embrace, and clasping each outer bough with some twining tendril, which, having thus secured its prey on one tree, seemed like a living animal to have bounded to another, and fastened its eager grasp upon some limb as yet untouched. Beneath the whole an interminable growth of underwood, protected by the woven canopy above, and flourishing rankly in its living fetters,

> "Like prisoners wildly overgrown with hair,
> Put forth disordered twigs."

A half hour's ride carried us through this teeming region to the foot of a steep and open-wooded hill, which, ascending with some difficulty, we came out once more upon the prairie, and found the change of temperature instantaneous. The road over the dry, grassy plain was very good, however, for the first six or eight miles, and as the evening began to close in intensely cold, we rattled them off in a very short time. At last, we came to a deep frozen gully, in crossing which our leaders bruised themselves so badly by breaking through the ice, that when we reached a spot of the same kind, but rather worse, a mile or two in advance, the frightened animals recoiled from the place, and refused to cross it. Our driver, a doughty little chap about five feet eleven, who rejoiced in the name of Sampson, and was a capital whip, by the bye, after using every exertion to get his whole team over, was at last compelled to give up the point, and proceed to detatch the leaders from the wheel horses. This, with our aid, was soon done; and my companion remaining with the leaders on one side, Sampson and I made a dash at the frozen brook, and, breaking through in the midst, the horses gave such a spring to free themselves from the wagon, that the swingletree bolt snapped, and had not the heroic little champion held on to the reins as tenaciously as a certain criminal judge in your city to his office, we might have been left a prey to the next drove of Philestinean wolves that should rove the prairie in quest of a supper. Sampson, however, was true to his name; and with a mighty arm bringing up his foaming steeds all standing, we crawled over the head of the rampant wagon (the hind wheels only had gone through the ice) and sprang to the firm ground. The swingletree was soon tinkered fast again; but now came the difficulty of getting the unwilling leaders over, who, it is presumed, had been no uninterested spectators of what had just been going forward; coaxing and whipping availed nothing; and we at last succeeded only by buckling two pair of reins together and passing them over the brook, two of us pulling on the horses mouths, while the third applied a smart castigation

behind. One of the poor animals again broke in, and floundered dreadfully before he reached a firm footing on the other side. But this was not the worst; our poor little Sampson in attempting to jump, plunged in himself to his knees, and suffered much inconvenience from it afterwards. The evening was indeed so cold that our wheel horses, who were coated with ice, their long tails being actually frozen solid, were in danger of freezing to death, had we been compelled to delay much longer. But, placing now the leaders on the firm ground beyond them, one smart pull served to extricate the wagon from the hole, and deliver us finally from our quandary. We had five or six miles still to go before reaching a house, and feeling some anxiety about Sampson's wet feet, we urged him to put the horses—nothing loath when once started—to the top of their speed. He did indeed drive furiously; but when we arrived at the house whence I write, the poor fellow's feet were frozen. Rushing at once to the fire, he would doubtedly have lost them, had there not chanced to be a physician present, who directed us what to do. The good humored little patient was removed without delay to the back part of the room, and we commenced pouring water into his boots until they melted from his feet, the temperature of the water being gradually heightened till it became blood-warm, while a bucket of ice-water stood by for the sufferer to thrust his feet in whenever the returning circulation became too violent for him to endure.—In the morning, though his feet were dreadfully swollen, he was enabled, by tying them up in thick horse blankets, to move about, and even return with his team. To the simple and judicious suggestions of the travelling physician present, our little hero was in all probability indebted for escaping a most awful calamity: a settler in this neighborhood having lost both legs a few days since by an exposure similar to Sampson's.

I am now staying at the house of a flourishing farmer, whose sturdy frame, bold features, and thick long black hair, would, with his frank address, afford as fine a specimen of the western borderer as one could meet with, and never allow you to suspect that ten or fifteen years ago he was a New York tradesman. He lives, like all other people of this country, in a log cabin, which has many comforts about it however, not usually found in these primitive domicils. Having a large family, with no neighbors nearer than ten miles on one side and twenty on the other, he maintains a schoolmaster to instruct his children: the room I occupy at night being fitted up with desks and benches as a school room. His farm, which lies along the edge of a beautiful and well watered grove, supplies him with almost every thing that he wants; and having once pursued a different mode of life, he seems now to realize the full independence of his situation, &c. more even than those who have alway been brought up as farmers. I told him this morning, as he sallied out to chop, with his two sons axe in hand, all clad in their belted capotes and white woollen hoods, that I should like to meet his sun-burnt features and independent step in Broadway, to see how many of his old acquaintance would recognize the pale mechanic in the brown backwoodsman. He promised me, if he came in winter, to appear with the guise in which I then beheld him, adding in western phraseology, "The way in which I'll do that, Squire, will be a *caution*."

After being detained here some days, waiting for the St. Louis stage, and loosing my travelling companion, who, having bought a horse, has gone on by himself, I have concluded that it would never do to go out of this country without visiting Galena and the mining country: and as there is now a stage running thither, I shall take the first opportunity to go with it. I have amused myself for the last three nights in watching for wolves by moonlight, at the edge of the wood, a few hundred yards from the house. They come howling round the house after nightfall, and if one is 'in luck' at all, are easily shot. But last night, after leaving my position but for five minutes, I heard the report of a rifle, and hastening to the spot, where a lad staid to fill my place for a moment, I found that a gray and a black wolf of the largest kind had approached suddenly within two or three yards of the muzzle of his gun, and startled him so, that he missed them both. In the confident hope of their return—for the bait that we had thrown about the place was still there—I took the little fellow's place, and wrapping myself in my buffalo skin, lay watching on the ground till nearly daybreak; and the enemy then not making his appearance, I was glad to creep shivering to bed.

Upon entering my room, which contained three beds, I observed, after striking a light, that the one opposite to mine was occupied by a new-comer, while a sheet suspended from the ceiling near the head of the other, and concealing the phrenology of its occupants from view, was evidently meant as a *caveat* against reconnoitering that part of the apartment.

Two gentlemen and a pretty young woman, who I was told was a bride on her way to St. Louis, breakfasted with us the next morning, And how was I shocked and horrified to see Madam, after wrapping herself in a handsome cashmere shawl, while their sleigh was getting ready, raise her white lace veil and place the stump of a *pipe* between her rosy lips! Can you conceive a more legitimate cause for divorce? *Whose* love would not end in smoke at witnessing such an awful phenomenon? '*An American bride smoking a pipe!*' What a subject for Cruickshank to illustrate, by way of frontispiece to the next edition of Captain Hamilton's 'Men and Manners!' Genius of Trollopism, shield and shelter us! If a woman must smoke anything less etherial than a jest, let not the accursed vapor steal their dew from lips so fresh. Let not her '*piping time*' arrive so soon. Let not—I can no more.

You shall hear from me next at Galena. Till then, farewell. H.

WRITINGS OF WASHINGTON.—In noticing some weeks ago these admirable volumes, published by Mr. Sparks, we referred to some of the early papers of Washington. Among these, written in his own hand, is a series of maxims under the head of "*Rules of civility and decent behavior in company and conversation.*" Of these there are 110. The only specimens published we extract, and agree with Mr. Sparks in the opinion, that "whoever has studied the character of Washington, will be persuaded that some of its most prominent features took their shape from the rules thus early selected and adopted as his guide."

1. Every action in company ought to be with some sign of respect to those present.

2. In the presence of others, sing not to yourself with a humming noise, nor drum with your fingers or feet.

3. Sleep not when others speak, sit not when others stand, speak not when you should hold your peace, and walk not when others stop.

4. Turn not your back to others, especially in speaking; jog not the table or desk on which another reads or writes, lean not on any one.

5. Be no flatterer, neither play with any one that delights not to be played with.

6. Read no letters, books or papers in company, but when there is a necessity for doing it you must ask leave. Come not near the books or writings of any one so as to read them, unasked. Also, look not nigh, when another is writing a letter.

7. Let your countenance be pleasant, but in serious matters somewhat grave.

8. Show not yourself glad at the misfortune of another, though he were your enemy.

9. When you meet with one of greater quality than yourself, stop and retire, especially if it be at a door, or any strait place, to give way for him to pass.

10. They that are in dignity or office have in all places precedency; but whilst they are young, they ought to respect those that are their equals in birth or other qualities, though they have no public charge.

11. It is good manners to prefer them to whom we speak before ourselves, especially if they be above us, with whom, in no sort, we ought to begin.

12. Let your discourse with men of business be short and comprehensive.

13. In visiting the sick, do not presently play the physician, if you be not knowing therein.

14. In writing or speaking, give to every person his due title, according to his degree and the custom of the place.

15. Strive not with your superiors in argument, but always submit your judgment to others with modesty.

16. Undertake not to teach your equal in the art himself professes: it savors of arrogancy.

17. When a man does all he can, though it succeeds not well, blame not him that did it.

18. Being to advise, or reprehend any one, consider whether it ought to be in public or in private, presently or at some other time, also in what terms to do it; and in reproving, show no signs of choler, but do it with sweetness and mildness.

19. Take all admonitions thankfully, in what place soever given; but afterwards not being culpable take a time or place convenient to let him know it that gave them.

20. Mock not, nor jest at any thing of importance; break no jests that are sharp biting, and if you deliver any thing witty and pleasant, abstain from laughing thereat yourself.

21. Wherein you reprove another be unblameable yourself, for example is more prevalent than precept.

22. Use no reproachful language against any one, neither curses nor revilings.

23. Be not hasty to believe flying reports, to the disparagement of any one.

24 In your apparel be modest, and endeavor to accommodate nature rather than procure admiration. Keep to the fashion of your equals, such as are civil and orderly with respect to time and place.

25. Play not the peacock, looking every where about you to see if you be well decked, if your shoes fit well, if your stockings sit neatly, and clothes handsomely.

26. Associate yourself with men of good quality if you esteem your own reputation, for it is better to be alone than in bad company.

27. Let your conversation be without malice or envy, for it is a sign of a tractable and commendable nature, and in all causes of passion admit reason to govern.

28. Be not immodest in urging your friend to discover a secret.

29. Utter not base and frivolous things amongst grown and learned men; nor very difficult questions or subjects among the ignorant, nor things hard to be believed.

30. Speak not of doleful things in time of mirth, nor at the table; speak not of melancholy things, as death and wounds, and if others mention them, change, if you can, the discourse. Tell not your dreams but to your intimate friends.

31. Break not a jest where none take pleasure in mirth. Laugh not aloud nor at all without occasion. Deride no man's misfortune, though there seem to be some cause.

32. Speak not injurious words, neither in jest or earnest. Scoff at none, although they give occasion.

33. Be not forward, but friendly and courteous; the first to salute, hear and answer, and be not pensive when it is a time to converse.

34. Detract not from others, but neither be excessive in commending.

35. Go not thither, where you know not whether you shall be welcome or not. Give not advice without being asked, and when desired, do it briefly.

36. If two contend together, take not the part of either unconstrained, and be not obstinate in your opinion; in things indifferent be of the major side.

37. Reprehend not the imperfections of others, for that belongs to parents, masters and superiors.

38. Gaze not on the marks or blemishes of others, and ask not how they came. What you may speak in secret to your friend, deliver not before others.

29. Speak not in an unknown tongue in company, but in your own language; and that as those of quality do, and not as the vulgar. Sublime matters treat seriously.

40. Think before you speak; pronounce not imperfectly, nor bring out your words too hastily, but orderly and distinctly.

31. When another speaks, be attentive yourself, and disturb not the audience. If any hesitate in his words, help him not, nor prompt him without being desired; interrupt him not nor answer him till his speech be ended.

42. Treat with men at fit times about business, and whisper not in the company of others.

43. Make no comparisons; and if any of the company be commended for any brave act of virtue, commend not another for the same.

44. Be not apt to relate news, if you know not the truth thereof. In discoursing of things you have heard, name not your author always. A secret discover not.

45. Be not curious to know the affairs of others, neither approach to those that speak in private.

46. Undertake not what you cannot perform; but be careful to keep your promise.

47. When you deliver a matter, do it without passion and discretion, however mean the person may be you do it to.

48. When your superiors talk to any body, hear them, nor neither speak nor laugh.

49. In disputes be not so desirous to overcome as not to give liberty to each one to deliver his opinion, and submit to the judgment of the major part, especially if they are judges of the dispute.

50. Be not tedious in discourse, make not many digressions nor repent often the same matter of discourse.

51. Speak no evil of the absent for it is unjust.

52. Make no show of taking great delight in your victuals, feed not with greediness, cut your bread with a knife, lean not on the table, neither find fault with what you eat.

53. Be not angry at table whatever happens, and if you have reason to be so shew it not, put on a cheerful countenance, especially if there be strangers, for good humor makes one dish a feast.

54. Set not yourself at the upper end of the table, but if it be your due, or the master of the house will have it so, contend not lest you should trouble the company.

55. When you speak of God or his attributes, let it be seriously in reverence and honor, and obey your natural parents although they be poor.

56. Let your recreations be manful not sinful.

57. Labor to keep alive in your breast that little spark of celestial fire called conscience.

FOREIGN INTELLIGENCE.

THREE DAYS LATER.—By the packet ship Europe, Capt. Maxwell, we have received London papers to March 16th, and Liverpool to the 15th (Saturday,) inclusive.

There have been fresh disturbances at Madrid.—The dates from that capital are to March 7th.

LONDON, SATURDAY, MARCH 15.—Consols, which left off at 81 5-8 3-4 this day sen'night, opened on Monday at 91 1-2, since which time they have not been higher than 91 1-2 5-8, nor lower than 91, closing last night at 91 3-8 1-2.

Money has not been near so plentiful; and the Bank of England has been making the Westminster Bank feel its power and influence, in making large offers of money on loan, in sums of not less than £2,000 on India Stock, and Exchequer Bills, at 3 per cent. 5 per cent. interest is now required for money in the city; and very lately it might have been obtained at 3 per cent. with ease.

LIVERPOOL, MARCH 15.—The splendid new American ship Kensington, which was stranded on the Welch coast, during the late gales, while on her first voyage from New York to Liverpool, has been raised by Messrs. Seddon and Leadley, and towed into Carnarvon Bay. She will shortly be brought round to Liverpool.

LONDON, MARCH 14.—Last night Mr. Ripton moved for leave to bring in a bill "for relieving the Archbishops and Bishops of the Established Church from their legislative and judicial duties in the House of Peers." After a discussion, attended by rather remarkable circumstances, to which we have elsewhere alluded, the motion was negatived by a majority of 67—the numbers being 125 and 58.

LONDON, MARCH 15.—Last night the North American Postage Bill went through Committee, was reported, and ordered to be read a third time on Monday.

Mr. Buckingham gave notice, that on the 26th of May he would move for leave to bring in a bill for the prevention of duelling; and also for the appointment of a select Committee to inquire respecting the vice of drunkenness.

Lord Althorp stated that he intended to propose that the House should adjourn for the recess from Wednesday, the 26th instant, to Monday, the 14th of April.

AMSTERDAM, MARCH 10.—The Handelsbald says—"Constant Palari, alias Carrara, was to day found guilty by the Court of Assize of a forcible entry at night, and robbing in an uninhabited house, and condemned to stand on a scaffold at the Hague for half an hour, to be confined in a house of correction, and to the payment of costs, with orders for an extract of the sentence to be posted up at the Hague and at Brussels, and that the articles, as many of them as are in the hands of justice, shall be restored to the owner.

"In the course of yesterday Polari narrated all the circumstances that preceded, accompanied, and followed the robbery of the diamonds; he repeated his previous declaration, that he was the sole person in the robbery, and that it was suggested to him by the gold ornaments, which he thought he could distinguish from the street in the palace of the Prince; that he never had any communication with any person in the Palace."

[*From Galignani's Messenger.*]

DISTURBANCES AT MADRID.—We have received from Madrid by express the Gazettee, the Age, and the Bulletin of Commerce, of the 4th inst. The Gazette has the following:—"In the night of Sunday last, symptoms of disorder were observed in a house named El Paradiso, in the street called Toledo, and at length it arose to a great height, the people within uttering seditious cries. But before the magistrates and troops could arrive, many of the respectable inhabitants of the neighborhood, of their own accord, assembled to suppress the disturbance, giving evident proofs of their zeal and resolution to maintain the laws and legitimate cause of the Queen Isabella II. Two of the disorderly persons were killed on the spot, and all who offered any resistance to the troops or attempted to make their escape were wounded and immediately conducted to the royal prison, with all who appeared to be their accomplices, the neighbors continuing to lend their assistance to the authorities. However scandalous and criminal this conduct was, it did not extend sufficiently wide to interrupt the public tranquility, nor was it even known at any distance from the place where it took place.

The Age gives a much more serious character to these events, and represents Madrid to be in a state resembling anarchy, stating that several inhabitants, whose names it gives, have been attacked in the streets by the Carlists, and compelled to take up arms in their own defence. Many arrests have taken place, it says, and most of those who have been taken to prison are friends to the Queen. Groups of Carlists pretend to be the night patrol, and go their rounds accordingly. Under the date of 7 in the evening, it adds—"The danger is imminent; the insurgents are firing in the quarter Arapies." This journal concludes by urging the Government to use the utmost severity.

The Bulletin of Commerce accuses the Royalist Volunteers of being the authors of what has taken place. It states that the disorder has existed for several nights, and that at last a party of the perturbasors had come to the point of firing upon the partisans of the Queen, in the quarter of the Cabada, thouting "Charles V. for ever!" They afterwards retired to a house in the street called Toledo, which they invested with the name of the Castle of Charles V., and where they made a desperate resistance, till 5 or 6 of them were killed, and about 30 wounded and taken to prison. Some of the troops were also wounded, missiles of all kinds having been hurled at them by the rioters. The Bulletin also concludes by recommending that no mercy should be shown to the rebels.

The following is an extract of a letter of the 4th instant, from Madrid:—"Several members of the Royal Court of Madrid have been dismissed as Carlists. On account of the dissatisfaction occasioned by the decree relative to suburban militia, it has been repealed. A royal order of Charles V., countersigned by the Bishop of Leon, his Minister of Justice, orders the Carlist troops who support his cause to shoot all that may be found fighting for Isabella II. However, adds the decree, the august persons of the Queen and the two Princesses her daughters shall be respected."

The *Indicateur* of Bordeaux of the 8th inst. gives the following from St. Sebastian of the 5th—"On the day before yesterday the rebels of Biscay were surprised at Omate by Brigadier Espartero, at the moment they had piled their arms, and were sitting down to their meal. They were completely routed, 800 of them having left their muskets behind them, and their loss in killed, wounded, and prisoners, amounting to 200. The commander of the Chinchua Queen's volunteers having arrived opportunely at Elosno, fell upon the fugitives, and killed a great many more of them. A few days ago the whole of the insurgents of Biscay, forming a force of 7,000 men, with a few bands from Guissusoa and Alva, besieged Guernica, and the Queen's garrison, notwithstanding it had been reinforced by 1,300 men, was obliged to give up the position for want of ammunition and provisions. In retiring, however, they made about 30 prisoners, amongst whom is the commandant Barronti. After their defeat at Omate, the rebels, it is to be presumed, cannot for a long time assemble in any great numbers.

A letter of the 7th inst. from Bayonne announces that the Spanish ex-Minister, M. Zea, has taken his departure for Rome, but it is not believed that he is charged with any mission.

There had been a disturbance in Saragossa on the 27th ult. and some fighting in the streets, by which several lives were lost; but it is not very distinctly stated whether it originated in a Carlist insurrectionary movement.

The Memorial Bordelais of the 8th inst. has the following—"We learn from St. Sebastian that the decree for organizing the Urban Militia has been publicly burnt in that town, without the authorities being able to prevent it. An express was immediatly sent off to convey this news to Madrid. According to the last accounts from the Capitol, extreme effervescence prevails there. The people loudly call for the dismissal of Ministers, particularly of Burgos and Zarco del Valle. The discontent has become general, and if the Queen's government does not pursue a different course, a revolution will break out at all points, and blood will be shed in abundance."

LIVERPOOL COTTON MARKET, March 11.

Since our report last week the cotton market has continued depressed, and the prices we then quoted are no longer obtainable: we reduce them ¼d per lb on Bowed, Alabama, and Orleans: about ¼d on Brazils, and 1d on Sea Island. Speculators have taken 300 American and 300 Surat, and Exporters 700 Surat. The import this week is 22,413 bags, 110 Sea Island 14½d to 20d—20 stained to 11¼d—3,610 Boweds 8d to 9d—3,460 N Orleans 8¼d to 9¼d.

SUMMARY.

LIBERAL COURTESY.—By the annexed correspondence, it will be seen, that the British Government, propose to present to each of the Institutions in the United States, enumerated below, a copy of a very valuable publication now in progress in England. This country is indebted much to Mr. O. Rich, an agent for the purchase of books in London, for his participation in this matter—and in the act of the British Government, we see with satisfaction a liberal and enlightened feeling of comity towards the United States.

London, Feb. 21st, 1834.

SIR—In consequence of your suggestion, that the Record Commission were desirous of presenting copies of their valuable publications to some of the Literary Institutions of the United States, I have the honor of enclosing herewith, a list of the principal Libraries where they would be most acceptable, and to which I shall have great pleasure in forwarding copies. I have numbered them according to their relative importance, in order that the Commissioners may be the better enabled to judge which to send to. Some of the latter numbers are inserted more on account of their *locality*, there being other Libraries of more importance, but situated in the immediate neighbourhood of the Institutions mentioned in the first part of the list. It will be a great gratification to me to be the medium of transmitting to the United States, this noble mark of the liberality and good feeling of the British Government towards my Country, and I feel confident that it will be productive of the happiest effects in drawing together the bonds of union between two nations more closely allied by natural ties than any other two on the face of the Globe.

With sentiments of respect and esteem, I have the honor to be, very sincerely, your humble servant,

O. RICH.

C. P. COOPER, Esq.
Secretary to the Record Commission, &c. &c. &c.

PUBLIC LIBRARIES.

1. The Philadelphia Library, Philadelphia, Pennsylvania.
2. The Boston Athenæum, Boston, Massachusetts.
3. The New York Society Library, New York.
4. The Charleston Society Library, Charleston, South Carolina.
5. The Baltimore City Library, Baltimore, Maryland.
6. The New York State Library, Albany, New York.

UNIVERSITY LIBRARIES.

14. The Library of Bowdoin College, Brunswick, Maine.
11. The Library of Darmouth College, Hanover, New Hampshire.
7. The Library of Harvard University, Cambridge, Massachusetts.
12. The Library of Amherst College, Amherst, Massachusetts.
15. The Library of Brown University, Providence, Rhode Island.
8. The Library of Yale College, New Haven, Connecticut.
16. The Library of the College of New Jersey, Princeton, New Jersey.

The Library of the University of Virginia, Charlottesville, Virginia.

17. The Library of the University of North Carolina, Chapel Hill, North Carolina.
10. The Library of the College of South Carolina, Columbia, South Carolina.
18. The Library of the University of Georgia, Athens, Georgia.
19. The Library of the University of the State of Alabama, Tuscaloosa, Alabama.
13. The Library of Transylvania University, Lexington, Kentucky.
21. The Library of St. Louis University, St. Louis, Missouri.

20. The Library of the University of Ohio, Athens, Ohio.

NEW BOSWELL'S COURT, LINCOLN'S INN,
February 22d, 1834.

SIR—Being assured that his Majesty's Government and the Record Commissioners entertain sentiments in all respects corresponding to those which you recently stated to me were entertained by the United States towards the British Isles, I have had no hesitation in instructing his Majesty's Printers to prepare sets of the Record Publications for the *whole* of the American Libraries, mentioned in the list accompanying your letter of yesterday.

I am, Sir, your obedient humble servant,
C. P. COOPER.

O. RICH, Esq.

These Public Records, of which the cost for each sett is about *Two hundred pounds sterling*, consist of "the Statutes of the Realm," "Domesday Book," "Rymer's Collection," and other rare and antient public documents, which, considering our descent, cannot but be of great value here, as consulting books.

APPOINTMENTS BY THE PRESIDENT,
By and with the advice and consent of the Senate.

WILLIAM M. PRICE to be Attorney for the Southern District of New York, in the place of James A. Hamilton, whose commission has expired.

JOHN P. HALE to be Attorney for the District of New Hampshire, in the place of Daniel M. Durell, whose commission has expired.

JAMES W. EXUM to be Marshal for the District of West Florida, reappointed.

GEORGE K. WALKER to be Secretary for the Territory of Florida, in the place of James D. Westcott, whose commission has expired.

DESTRUCTION OF THE PACKET SHIP NEWARK.—This vessel, lying out in the North river, waiting a wind to proceed to *New Orleans*, and having on board a very valuable cargo, took fire last night at half past 11 o'clock, and burnt to the water's edge.—Boats from the shore and from the Austrian frigates put off to her as soon as the flames were discovered.

THE MEAT OF DISEASED CATTLE.—An investigation of an interesting character has recently engaged the attention of the faculty in Paris. In consequence of the supposed custom among the butchers, of exposing for sale the flesh of animals that had died of various diseases, it was determined by the government to ascertain, if possible, what diseases, in animals intended for the butcher, are capable of communicating to their meat deleterious qualities. The result of the inquiry, which was pursued with great diligence, was, that only one of the diseases of cattle possesses a contagion for the human subject, that is not destroyed by the process of cookery: this disease is *malignant pustule*. Vast numbers of cattle, it appeared, were constantly sold for slaughter while laboring under other complaints, but no authenticated case could be discovered in which harm had resulted from the use of their meat. Thousands even of the cattle slaughtered while laboring under the contagious typhus that prevailed among them so extensively in 1814, 1815, and 1816, were used as food without any discoverable injury. Singular as this fact may seem, it appears to be well established by this investigation.

On the whole, the conclusion drawn in the report is, that butcher's meat is deleterious to man in two conditions—1st, When spoiled by too long keeping; and 2d, When the animals slaughtered were affected with malignant pustule.

Although the process of cooking may prevent any injurious consequences from the eating of a diseased animal, yet it is very unpleasant to know the fact that the beef on our table is from cattle sick with typhus, with liver complaint, with inflammation of the lungs, and many of the disorders incidental to such animals, and the only dependance is on the integrity of the butchers, who will not give such meat to their customers, knowing it to be diseased. One great advantage which the Mosaic law and Rabbinical institutions have over all modern customs, is blending religious with political regulations, purifying both soul and body at the same time. The beef exposed in our markets with leaden seals must necessarily be free from all or nearly all the impurities in cattle complained of above. An experienced person, who has studied the anatomy of the beast, is commissioned and paid by the congregation to kill all kinds of butcher's meat. The animal is not stunned with blows, producing stagnation and congestion of the blood; the throat is cut with a remarkably sharp knife, and all the veins and arteries are emptied; the lungs are searched with the hand; if the liver is attached to the ribs, or there are impurities, malformation, or any apparent disease, it is condemned, and the leaden seals are not attached to the meat. It is thus that the observance of ancient laws by this ancient people give them great protection against feeding on diseased animals, and our old New-Yorkers, of all religious denominations, who understand the object, generally give a preference to the meat with leaden seals.

FANNING MILL.—An ingenious wight, named William Gall, has constructed a pair of self-acting fanners, which, without the aid of man, sift wheat, corn, &c. The simplicity of the invention is astonishing. By a funnel of sheet-iron, the wheat descends upon an iron wheel full of brackets; the wheel is so nicely balanced, that the moment the wheat falls the wheel revolves, and throws the wheat into a pair of fanners on the flat below. On the outside of the iron wheel is a wooden one, and over it is a belt attached to the fly wheel of the fanners, which impels them, and so long as a particle of wheat is left, the machine moves and throws it out.—[Sat. Eve. Post.]

Lines occasioned by the following notice taken from th Baltimore Gazette, and reprinted in the American during the prevalence of the Cholera. "Died on Thursday last, at Hospital No. 3, Sister Mary Frances, one of those Angels in human form, who are found, not in the abode of luxury, but in all our hospitals, supplying the wants of, and ministering comfort and consolation to the sick and the dying, regardless of personal danger, and rejecting all temporal compensation. "The deceased was found in the morning attending as usual to the patients in the hospital, with the smile of peace and serenity on her countenance; she sickened about 8 o'clock, and by 7 in the evening was a corpse."

TO THE SISTERS OF CHARITY.

For you, ye heaven—sent Sisters, pure and meek,
No idle, flattering accents I intend—
I know, full well, no earthly meed you seek;
Above all mortal praise your thoughts ascend.

Undaunted intimates of death and pain!
You heed no minstrelsy of earth—strung lyre:
The softest siren notes would sound in vain
To ears impatient for the heavenly choir.

But who that treads life's rough and weary way,
If some fair prospect open on his sight,
Seeks not his fellow wanderers' step to stay,
And make them partners in his new delight?

Turn then, all ye who, with indignant mind,
Behold the vileness of this mortal state;
Where craft and guile on ev'ry hand you find,
With all the forms of selfishness and hate—

Here let your misanthropic brow unbend,
And warmest feelings of the heart expand;
For, if to earth some gleams of Heaven descend,
They snre must light upon this sacred band.

And ye who sport beneath the golden beams
That o'er youth's jocund morning shed their light,
To whom the downward path of life still seems
Immeasurably distant from the sight;

Oh! think me not a censor cold and stern,
A frowning foe to all that's bright and gay,
If, for a moment, I would have you turn
And see these Sisters tread their holy way.

I would not have fierce superstition's power
Bear down your minds, in sullen gloom to grope;
I would not overcloud one radiant hour,
Nor crush one rising bud of youthful hope:

Yet, stay awhile, nor all your moments waste
For joys inconstant as the vernal sky:
You here may deep, though silent, pleasure taste,
Whose impress on the soul shall never die.

For how can earth present a goodlier scene,
Or what can waken rapture more refin'd,
Than dauntless courage, silent and serene,
With maiden gentleness and love combin'd?

Behold in yon receptacle of wo,
Where victims of disease assembled lie,
That gliding form, with noiseless footstep go,
From couch to couch, her angel task to ply:

She dwells mid sounds and sights of pain and death;
The feeble plaint, the involuntary cry,
The fierce convulsive throw, the infectious breath,
The heaving groan, the deep-drawn burning sigh.

Oh! child of frolic, in whose giddy brain
Delusive fancy's ever on the wing,
Think you this gentle maid feels nought but pain?
That in her path no lovely flowrets spring?

Gay visions round your pillow nightly throng—
The morning ramble, and the evening dance,
The rout, the feast, the soul entrancing song,
The flatterer's whisper, and the lover's glance.

Around her couch no brilliant phantoms play;
No airy spectre of past pleasure flies;
But deeds of mercy which have made the day
Give tranquil slumber to her tear-stain'd eyes.

They 're precious gems, those tears that wet her cheek
Worth more than all that earth or ocean know:
The noblest language of the heart they speak;
From high and holy extasy they flow.

Her feelings ye alone can understand
Whose deeds have wak'd the sufferer's grateful prayer;
Who've felt the pressure of the dying hand,
The rich reward of all your pious care.

No sad or strange reverse her pleasures dread;
Of time and chance, they mock the strong control.
Her heaven-aspiring virtues ever shed
A cloudless light upon her peaceful soul.

The follies that command this world's esteem,
Within her spirit find no resting place;
Like idle motes that cross the solar beam,
They serve its bright and changeless way to trace.

Yes! such this sacred band, such peace is theirs;
Unchang'd when days shine bright, or tempests lower
Through life they pass, untainted by its cares;
When death draws near, they gladly hail his power.

And then, like birds that seek a better clime,
On swift untiring wing their spirits rise,
And gladly leave this turbid stream of Time,
To take their homeward progress thro' the skies.

SILVIO.

[*From the Calcutta Quarterly Magazine and Review.*]

THE SONG OF THE FORGE.

Clang, clang,
The massive anvils ring
Clang, clang,
A hundred hammers swing,
Like the thunder-rattle of a tropic sky
The mighty blows still multiply,
Clang, Clang.
Say brothers of the dusky brow,
What are your strong arms forging now?

Clang, clang—we forge the coulter now,
The coulter of the kindly plough:
Sweet Mary mother, bless our toil;
May its broad furrow still unbind
To genial rains, to sun and wind,
The most benignant soil.

Clang, clang—our coulter's course shall be
On many a sweet and sheltered lea,
By many a streamlet's silver tide,
Amidst the song of morning birds,
Amidst the low of sauntering herds,
Amidst soft breezes which do stray
Through woodbine hedges and sweet May,
Along the green hill's side.

When regal autumn's bounteous hand,
With widespread glory clothes the land,
When to the valleys from the brow
Of each resplendent slope, is roll'd
A ruddy sea of living gold,
We bless, we bless THE PLOUGH.

Clang, clang,—again, my mates what glows
Beneath the hammers' potent blows?
Clink, clank,—we forge the giant chain,
Which bears the gallant vessel's strain
'Midst stormy winds and adverse tides;
Secured by this, the good ship braves
The rocky roadstead, and the waves
Which thunder on her sides.

Anxious no more, the merchant sees
The mist drive dark before the breeze,
The storm cloud on the hill;
Calmly he rests, though far away,
In boisterous climes, his vessels lay,
Reliant on our skill.

Say, on what sands these links shall sleep,
Fathoms beneath the solemn deep:
By Africa's pestilential shore,
By many an ice berg, loan and hoar,
By many a palmy western isle,
Basking in Spring's perpetual smile;
By stormy Labrador.

Say, shall they feel the vessel reel
When to the battery's deadly peal
The crashing broadside makes reply;
Or else, as at the glorious Nile,
Hold grappling ships, that strive the while,
For death or victory?

Hurrah—cling, clang—once more, what glows,
Hark brothers of the forge, beneath
The iron tempest of your blows
The furnace's red breath?

Clang, clang—a burning shower clear
And brilliant, of bright sparks, is poured
Around and up in the dusky air,
As our hammers forge the SWORD.

The sword!—extreme of dread; yet when
Upon the freeman's thigh 'tis bound
While for his altar and his hearth,
While for his land that gave him birth,
The war drums roll, the trumpets sound,
How sacred is it then!

Whenever for the truth and right
It flashes in the van of fight,
Whether in some wild mountain pass,
As that where fell Leonidas;
Or on some sterile plain and stern,
A Marston, or a Bannockburn;
Or amidst crags and bursting rills,
The Switzer's Alps, grey Tyrol's hills;
Or, as when sunk the Armada's pride,
It gleams above the stormy tide;
Still, still, where'r the battle word
Is Liberty, where men do stand
For justice and their native land,
Thou Heaven bless THE SWORD!

THE PILGRIMS OF THE RHINE.—We have seen in the hands of *Wm. A. Colman*, a copy of this new work of Bulwer. It is eminently beautiful in its typography and plates—of which latter there are twenty-seven.

The SENTRY BOX, engraved by Danforth, from *Leslie's* picture, is also to be seen at the same place, and is well worth looking at.

[*From the St. Louis Republican, March* 10.]

THE MORMON DIFFICULTIES.—A late number of the Enquirer—a paper just started at Liberty, Mo.—contains a military order from Governor Dunkin to the captain of the "Liberty Blues," commanding him to hold himself and his men in "readiness to assist the civil authorities in apprehending and bringing to trial the persons offending against the laws, in November last, in Jackson county, in conflicts between the Mormons and a portion of the other citizens of that county.' He is commanded to attend the court in that county, during the trial of the causes, and execute such orders as may be given him by the Judge or Circuit Attorney. Under these orders, and at the request of Judge Ryland, who stated that a number of Mormons wished to testify beore the Grand Jury, Captain Atchison marched his company into Independence, on the day appointed for holding court, having a number of Mormons under his protection. After a stay of about three hours it was concluded by Judge Ryland, the Circuit Attorney, and Attorney General Wells, that "it was entirely unnecessary to investigate the subject on the part of the State, as the jury were equally concerned in the outrages committed, and it was therefore not likely that any bills would be found." The Captain was therefore directed to return to Liberty and to discharge his men. "To see a civil court (the Governor says) surrounded by a military force, is well calculated to awaken the sensibilities of any community;" and the Governor charges his subordinate officer to perform his duties in the mildest manner possible. It is certainly a new thing in this country, to see the military called in to protect the civil authorities in the exercise of their just powers; and goes far to prove how far we have relaxed in virtue and a regard for the laws which ought to govern us. Every patriot must hope, that the occasion may seldom arise when it shall be necessary to surround a judicial tribunal with such guards. It is a pernicious example, but rendered, perhaps, necessary in the present case by the extraordinary circumstances attending the conflict.

FOREIGN INTELLIGENCE.

APRIL 5TH.—At a late hour we received by the Liverpool packet, *Pacific*, our London files to the 5th ult.; and we are indebted to the kind consideration of the Mate of the Pacific, for the London Times of the 10th March, and the Liverpool Standard of the 11th for which he will accept our thanks. These are also due to Mr. Hope, the Pilot, who finding our boat unable to pull up against a strong head wind, made a signal for his pilot boat, the William Bayard, to take her in tow, and bring her up to the Narrows.

In the House of Commons Mr. Hume's motion for a repeal of the corn laws, by substituting a fixed duty, was defeated on Friday 7th, after two nights' debate, by a majority of 312 to 155.

On the same day Lord Althorp introduced a bill to repeal the House tax.

Paris dates are to the 8th of March; Madrid and Lisbon to the 1st. Disturbances of a serious nature, but without loss of life, occurred in Paris on Sunday, the 23d of Feb. They were undergoing judicial inquiry. In the Chamber of Deputies they had also been discussed. Gen. Jacqueminot, the Commander of the National Guards, said

The National Guard, I do not hesitate to say it, is tired, fatigued, and discontented (murmurs), and in fact, gentlemen, the position of the citizens composing it is become intolerable, for they are continually under the necessity of taking up arms to defend their shops and warehouses. The citizen, instead of taking his wife out to walk of a Sunday, is obliged to shoulder his musket. As for myself, I am thirsting after that repose of which I have been deprived for the last three years. As for the bludgeon men, I abhor them as much as M. Barrot himself can abhor them.

Of general news there is nothing important.

Burgos had not resigned his seat in the Spanish Cabinet.

The *Foreign Intelligence* by the Pacific—of which we gave an outline on Saturday—though much later than before received, is in truth of very little interest; and our columns are at this moment too much crowded with matter of near and pressing importance to leave us room for miscellaneous extracts.

In England, affairs look well enough. The rejection of Mr. Hume's proposition for a repeal of the corn laws, and for allowing the importation of foreign corn at a fixed rate of duty, together with the failure of a previous motion by *Sir I. Ingoldsby* to abolish the excise on malt, (which amounts to near £5,000,000 sterling *per annum*,) encouraged Ministers to repeal the house and window taxes—two vexatious and not very productive sources of revenue.

A petition had been presented to Parliament from the shipping interests, praying that the practice of *impressment* for the Navy might be abolished. It had not been discussed, but *Lord Grey* had intimated incidentally his doubts of the expediency of complying with it.

The Reverend *Mr. Gleig*, author of the *Subaltern*, and the deer-up of *Lord Londonderry's* military campaigns, and who, though a clergyman, had distinguished himself by his zeal, in opposition to the Reform Bill—had received from *Lord John Russell* the appointment of chaplain to the Chelsea Hospital. The appointment is badly viewed by the whole Ministerial press.

A plethora of money, or superabundance of capital seems to be complained of generally in England. Mr. Alexander Baring, said in his place in the House of Commons—that if the *twenty millions* which are to be paid to the slave owners in the colonies, instead of being funded, were issued in the shape of floating debt—that is, if, instead of stock redeemable at a distant period, (in which, according to Mr. B., there is now less confidence than there used to be) Exchange bills were issued—they could be negotiated *at an interest not exceeding two per cent. per annum*—that is, about the rate of our *monthly* interest in these times.

In France, Louis Philppe goes the whole against the liberty, or possibly the license of the press. The law for the snppression of publications sold by criers in the streets, was followed by the condemnation of M. Cabet, a member of the Chamber of Deputies, for a publication tending to bring the King's government into contempt. We annex a brief notice of the trial.

COURT OF ASSIZES.—SITTING OF FEB. 28.

Trial of M. Cabet.—A strong military force was stationed in the Palais de Justice and the environs; troops of the line were bivouacked in the area opposite the Court of Accounts, and the whole companies occupied the Salle des Pas Perdus and the galleries of the Court of Cassation. Military patrols and a multitude of police agents circulated in all the passages and avenues.

The court was crowded, principally by persons of note, including many deputies, among whom we observed Messrs. Dupont de l'Eure, Berard, Arago, Laffitte, Garnier Pagès, Georges Lafayette, Legendre, d'Argenson, de Ludre, Cormenin, Odillon Barrot, Laboissiere, Maille, Corcelles, Puyraveau, Mauguin, Comte, General Bertrand, &c.

The Registrar read the authorization to prosecute, granted by the Chamber of Deputies, and other papers of mere form, and then proceeded to read the two articles inserted in the *Populaire* of January 12 and 19, upon which the prosecution was grounded. The first was entitled *La Republique dans la Chambre.* The other article was entitled *Crimes des Rois contre l' Humanité*, after censuring Louis Philippe for repelling the Poles, in obedience to Nicholas, represents his system as counter-revolutionary, anti-national, and anti-popular, and himself as the enemy of the patriots of all countries. Both these articles were signed "Cabet." The Registrar then called Messrs. Lafayette, Arago, Dupont de l'Eure, Lffitte, Odillon Barrot, and Bernard, the witnesses summoned on the part M. Cabet.

The Procureur General, however, objected to their being examined, as the prosecution was for offences against the laws of the press.

M. Cabet maintained his right to have them heard, on the ground that one of the passages complained of was, "the evil is in Louis Philippe," and he wished to prove that it was he alone who governed, and who in particular had chosen Prince Talleyrand and other personages of the same description, but he concluded by renouncing his claim to interrogate witnesses.

M. Persil then addressed the jury, at considerable length.

M. Marie, counsel for M. Cabet, addressed the Court and jury on behalf of his client.

M. Garnier Pagés having obtained leave of the Court, delivered an energetic speech in defence of M. Cabet.

M. Persil, in reply expressed his regret that the law against the associations had not been presented 18 months ago. Either the associations must be dissolved, or the monarchy of Louis Philippe must fall. "We (added he) fought against Charles X., and we will fight against the republic, if it must be so."

M. Marie spoke briefly in reply, after which,

Mr. Cabet addressed the Court and the jury. He made a profession of his political faith, declaring that he wished not for a revolution, but for the people to obtain their rights by the force of public opinion. The year 1793 was a tempest that might have arisen under a monarchy. The best Republicans were those who wished for blood the least.

The President then summed up, and the Jury retired, and after three quarters of an hour's deliberation, returned and delivered a verdict of *guilty* upon the second count.

The Court in consequence condemned M. Cabet to two years imprisonment, interdiction of civil rights for two years more, and a fine of 4,000f.

LAFAYETTE is spoken of in a late letter from Paris, in the Times, as about soon to resume his seat in the Chamber.

We do not see in the disturbances at Paris or Lyons, any indications to justify the alarm expressed by some of the London papers, respecting the duration of *Louis Phillipe's* government.

In *Spain* all goes on slowly and doubtingly. Difficulties occur about convoking the Cortes, and the delay tends to alienate the liberals from the Queen's government. The Queen Regent is spoken of slightingly as to her private deportment, as though another *Godoy* were to be raised up in an obscure favorite she has found.

In *Portugal* the quarrel endures, and will endure, apparently, for notwithstanding the decisive advantage gained by *Saldanha* over the Miguelites on the 18th February, Miguel still at the latest dates from Lisbon, (1st March,) held *Santarem*—while misunderstandings prevailed among Pedro and his generals.

Of the Northern powers little is said, and of their movements and plottings less appears to be known.

THREE DAYS LATER FROM ENGLAND.—The ship *Lotus* arrived last evening, sailed from Liverpool on the 16th ult., and we are indebted to Captain Watts for the Liverpool Mercury of the 14th, the only paper he brought.

LIVERPOOL, March 13.—The sales of Cotton for the week ending this evening, amounted to only 9000 bales, and prices declined 1-4d. per pound. The arrivals were only two from the U. States, and one from Brazil. Our corn market was dull, and prices rather declined.

LONDON, March 13th, (correspondent of the Liverpool Mercury.) Public matters to-day have not been mixed with any intelligence, or domestic occurrence. Proceedings in Parliament do not appear to excite any interest whatever, and the prevailing impression appears to be that this Parliament will separate without doing any thing whatever. The Bank of England has now offered to lend money in sums not less than 2000*l.* on India Bonds and Exchequer Bills, at three per cent. Money is again very plentiful, and of easy discount. The issue of the debate on the corn trade continues to be the subject of conversation and disappointment amongst all classes of the citizens, and next to the budget nothing has excited them so much.

The money market has been heavy today; Consols have declined to 91 1-4 from 91 1-2, the price at which they opened. Spanish and Portuguese are much at the price of yesterday, but very little has been done, and the tendency of the money market is drooping.

The Colonial Market is without interest; the demand continues limited, and the market is but scant-

ly supplied; the imports are very fair, but we think that as the season advances prices will decline; most of the quotations are merely nomtnal, and the principle article, Sugar, is selling about 300 hhds. daily at 50s. for brown, 52s. to 54s. 6d. yellow, and fine 68s. to 68s. 6d.; Mauritius, 4707 bags went by public sale this day, at 44s. to 56s. 6d. for low brown to fine yellow, being former prices. OILS—There is still a very good demand for all sorts of seal and fish at higher prices.

FALMOUTH, Sunday morning, 11 o'clock.—The Pike has this morning come in, having left Lisbon on the afternoon of Tuesday last. The account she brings is of a much more cheering character to the Constitutional cause than what has lately been received. An engagement took place on Sunday morning with the outposts of the two armies, which brought on a general engagment, the report of which was a complete defeat of the Miguelite force that lay outside of Santarem. The few that remained from the effects of the dreadful slaughter retreated within the walls of the city, upon which it was expected an immediate attack would be made, as Don Pedro left here yesterday, accompanied by the Duke of Terceira, for the army. I have no time to say more, as other expresses are about leaving.—[Courier, March 10.]

NOW READY,

AN INTERESTING AND USEFUL MAP.

Upon which is delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It may be had either in sheets, price $1 25, or put up in morocco for pocket maps, price $1 50, or on rollers at $2 25, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street.

New-York, April 2, 1835.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines. and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

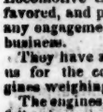
By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. de

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.



The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, *warranted* of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

ALSO—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of *Farmers*.

W. THORBURN,

347 N. Market st. (opposite Post Office.)

☞ Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better tustice can be done in the execution.

*** Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.

MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, *Daily, Tri-Weekly, and Semi-Weekly; either or all* of which may be seen and obtained by those who wish them, by calling at 347 *North Market street, Albany.*

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29tf RM&F

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¾ inch, 200 do. 1¼ do. ¾ do. 40 do. 1¼ do. ½ do. 800 do. 2 do. ½ do. 800 do. 2½ do. ½ do. soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2¼, 2⅜, 2⅝, 3, 3⅛, 3¼, and 3½ inches diameter for RailwayCars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON,

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane. J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad., Germant. and Norrist. Railroad

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STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads

No. 264 Elizabeth street, near Bleecker street, New-York.

☞ RAILROAD COMPANIES would do well to examin these Cars; a specimen of which may be seen on that part o the New-York and Harlaem Railroad, now in operation. J35 tf

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m10

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER, Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark, by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE, Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same. m28

Dip, Declination and Variation of the Needle in the United States. By A CITIZEN OF NEW-YORK. [For the Railroad Journal.]

If the manufacturer of compasses in Birmingham, England, will be so polite as to send to Doct. Smith, 28 Water st., New-York, two of his needles, that stand alike in their directive course for three days successively, he will then answer the question put by him in the Railroad Journal, of March 22d, 1834; for he never has seen two needles, which were imported from England, that stand alike for that length of time.

THE BRAZILIAN BAMBOO.—"Among the trees which attracted our attention," says Dr. Walsh in his travels in Brazil, "were the different species of bamboo, some of which were of enormous size, and some of singular beauty. Of the first kind were many that measured two feet in circumference, sending out large lateral branches, and so tall as to resemble forest trees. Others, of equal magnitude, without any branches, shot out in a single stem divided into regular joints, smooth and tapering to a point, till they attained an immense height. Some were not so thick, but ran up till they became so slender that they bent down, gradually tapering to a very fine point, as thin as a horse hair, and waving across the road like long fishing rods. I cut one of them, which had shot up from the valley below, about the middle, where it was not quite so thick as my wrist. After carrying it some time in my hand, where it felt lighter than a cart whip, I laid it along the road and measured its length, and found it fifteen yards long, so that the entire plant must have been ninety feet, tapering, and polished the whole way with the most exquisite finish." Another kind was so prolific that it covered the whole surface of the forest, climbing to the tops of the highest trees, and clothing them with the most exquisite verdure. Sometimes it ran from tree to tree, covering the whole sloping surface of a glen with a level uniform curtain of the richest drapery. This vegetable surface is called "grass of the thicket." It yields the cattle a supply of green and wholesome fodder at all seasons.

☞ The following Gentlemen have consented to act as Agents for the NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE; also, for the MECHANICS' MAGAZINE—the AMERICAN RAILROAD JOURNAL—and for the AMERICAN PLOUGH-BOY:

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THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its *second* year. It will be continued in a manner altogether *superior* to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and *for several years*, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The *first year*, or *two* first volumes, *having been stereotyped*, may now be had either in numbers, or bound in boards—either at *wholesale* or *retail*. Price $1 50 per vol. in numbers, or $1 75 in boards, or $3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

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Jan. 22, 1834.

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☞ All Letters and Communications for the above publications, may be addressed, *free of postage*, to
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☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as in England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.
HENRY BURDEN, Agent.
Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.
H. BURDEN.
J23 1aiu

TO CIVIL ENGINEERS.

The Western Railroad Company, incorporated by an act of the General Assembly of the State of Tennessee, for the purpose of constructing a Railroad from the town of Jackson, in the county of Madison, by the most practicable route to the Mississippi river, wish to employ one or more persons as engineers to survey the route and superintend the location and construction of said road. Gentlemen who wish employment in the above capacity, will forward to the undersigned on or before the 3d day of June next, the terms upon which they are willing to engage, also the most unquestionable testimonials of good character and scientific and practical skill in works of the above description. An election of an engineer will not take place before the 3d of June.
By order of the Pres't & Directors.
JOS. H. TALBOT, Cash'r & Sec.
Jackson, March 18, 1834. J a19 3t